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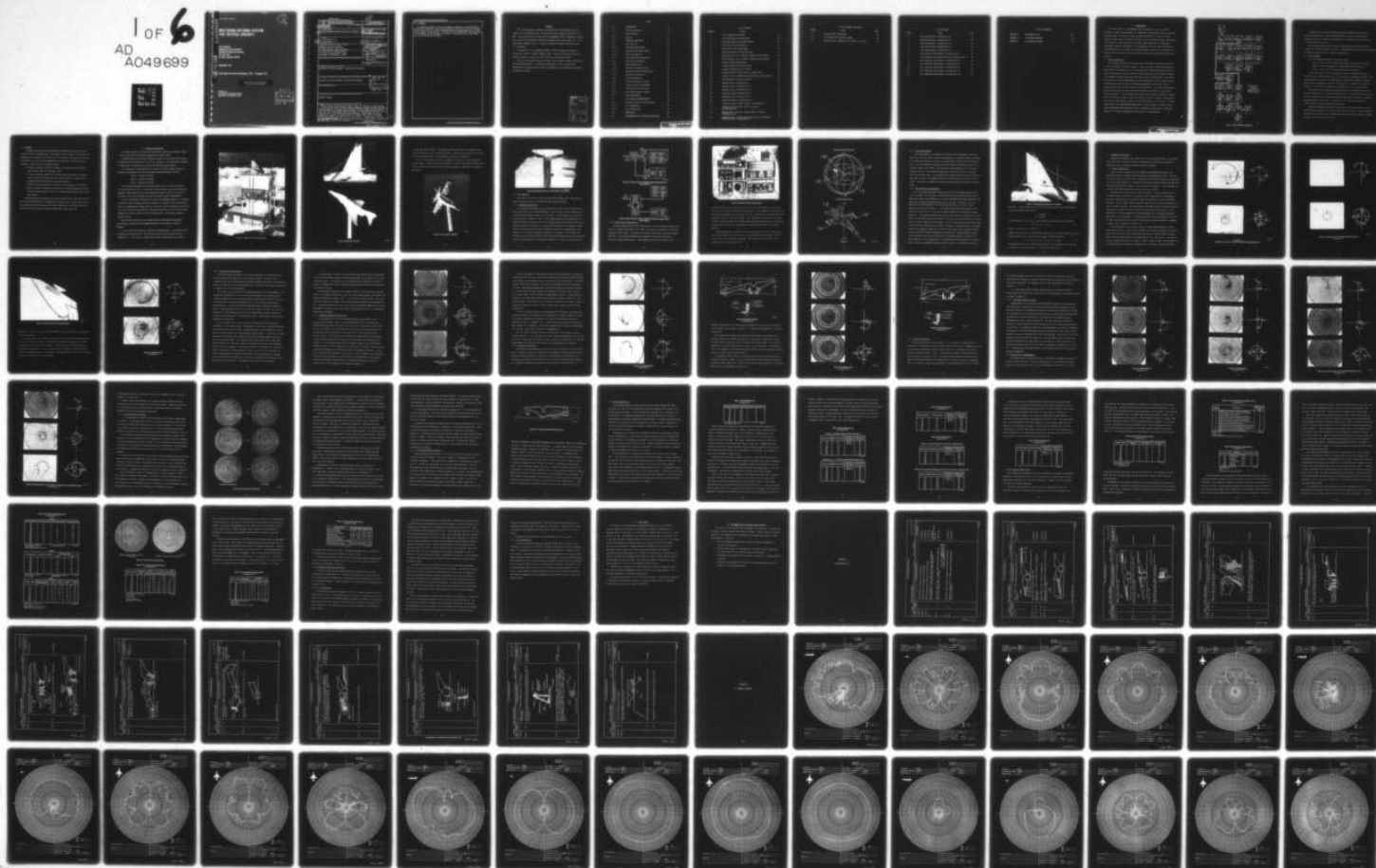
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MULTIBAND ANTENNA SYSTEM FOR TACTICAL AIRCRAFT

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September 1977

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20. ~~ABSTRACT~~

* A mechanical design study was performed to demonstrate the feasibility of locating this antenna in the vertical stabilizer of the F-4 and F-18 aircraft. In the case of the F-4, retrofit possibilities were investigated and a flyable fincap antenna was fabricated. The results of the mechanical study showed that it is feasible to use the antenna in the F-4 and F-18 as well as other Navy aircraft including the AV-8.*



PREFACE

This report documents a design study performed by the McDonnell Aircraft Company for a Multiband antenna covering the frequency range from 30 MHz to 400 MHz. This work was done for the Naval Air Development Center, Warminster, Pennsylvania under Contract N62269-77-0138 from November 1976 through August 1977. The Navy Project Engineer was Mr. J. Miller, the MCAIR Principal Investigator was F. W. Vortmeier.

The capability of an existing 100 MHz to 400 MHz antenna was extended to include the 30 MHz to 100 MHz frequency range. Size was minimized to make the antenna suitable for use on F-4, F-18, AV-8, and other Navy aircraft.

This report describes the work performed, the successful results obtained and the substantiating data. It includes a description of the configurations, impedance data, antenna patterns, power measurements, gain comparison measurements and mechanical design.

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1.0 INTRODUCTION

The requirement for a new VHF/UHF radio, suitable for close air support aircraft, involves the development of a companion, wide frequency range, three band, antenna system. The radio will have a single RF connector to cover all three frequency bands and will not have provisions for active antenna tuning. Development of an antenna to cover the 30 MHz to 400 MHz region without active tuning was a significant technical challenge in the development of the new radio and since the new VHF/UHF radio is to be used on all tactical Naval aircraft it is desirable to have an antenna system that can be installed on as many tactical Naval aircraft as possible.

1.1 Scope and Approach

The program consisted of tests supported by analysis to determine the effects of various changes to the basic antenna. Thirty one formal antenna configurations were tested and documented in the configuration log. Numerous informal variants of these configurations were also tried at various times that did not achieve significant progress in desired directions and did not warrant documentation. The extent of data taken on each configuration was often determined by results obtained; some configurations were only used for impedance measurements, others were used for antenna patterns and some were used for all measurements. The early configurations were used to explore the basic antenna and determine sensitivity to its various tuning components. A Test Configuration Sequence Block Diagram showing the sequence that was followed to obtain a final configuration is given in Figure 1 which shows the numerical configuration sequence of the modifications to the antenna. The heavy lines connect the configurations which led to a useful antenna. The light lines connect sequences which were used either to explore characteristics of the basic antenna or to explore techniques which proved to be unsatisfactory. ●

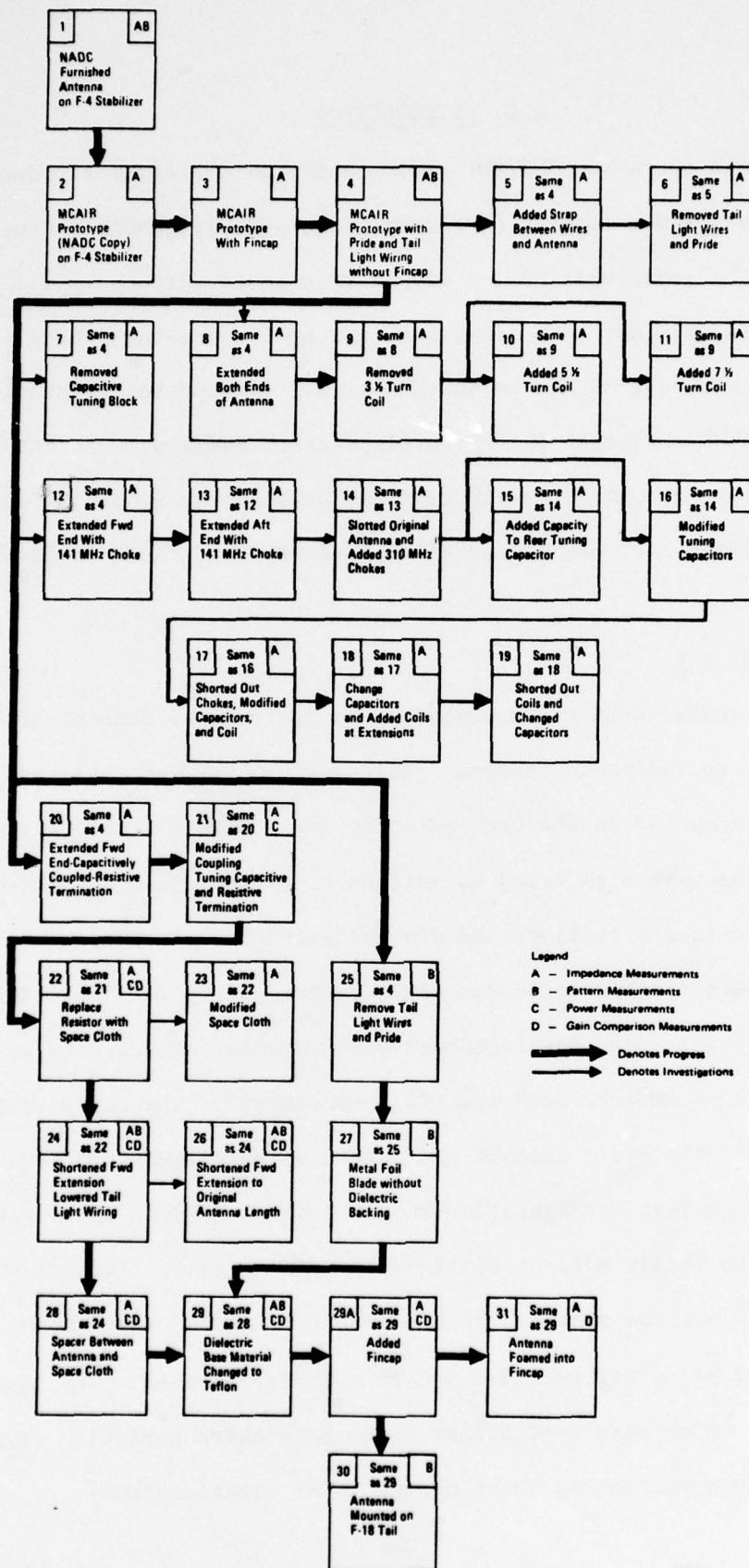


Figure 1 Test Configuration Sequence

A mechanical and structural design study was performed on the selected antenna configuration to ensure flightworthiness. Layouts and installation drawings were made to show how the antenna will be mounted in the F-4 and how it could be mounted in the F-18.

An antenna designed to meet the NADC requirements was fabricated and was foamed into a fincap provided by the Navy. The Multiband Fincap Antenna is considered flightworthy and suitable for a flight test program.

1.2 Work Performed

The test program consisted of three major tasks:

Task 1 - Full Scale F-4 Antenna Development, Design and Fabrication

Task 2 - Fifth Scale Model F-4 Antenna Radiation Pattern Test

Task 3 - Fourth Scale F-18 Antenna Pattern Investigation

A full scale model of the F-4 empennage and center fuselage section was installed atop a wooden antenna tower for the purpose of impedance testing. Tests were conducted to establish the performance of the existing 100 MHz to 400 MHz antenna and to determine the effects of modifying it to operate from 30 MHz to 100 MHz. A total of 28 configurations were tested on the full scale model.

Fifth-scale antenna patterns were measured with the antenna located on the vertical stabilizer of a fifth-scale model of the F-4. Measurements were made on the basic antenna and on configurations that showed promise during the impedance measuring phase of these tests. A complete set of radiation patterns was obtained with the final installed antenna design.

Fourth-scale antenna patterns were measured with the antenna located on the right vertical stabilizer of a fourth scale model of the F-18. These measurements consisted of a complete set of antenna patterns using the final antenna configuration that resulted from the F-4 tests.

1.3 Results

A multiband antenna was developed which is capable of operating over the required 30 MHz to 400 MHz range. The antenna is small enough to be suitable for mounting in the vertical fin of the F-4 or F-18 aircraft, the ventral fin of the AV-8 Harrier, and the vertical stabilizers or ventral fins of many other Navy aircraft. Tests of the F-4 installation show:

- o In Band 1 operation (30 MHz to 100 MHz) the antenna meets the requirements given in NADC Work Statement, 2041.
- o In Band 2 operation (100 MHz to 225 MHz) the antenna meets the requirements of the work statement and will perform equal to or better than a standard VHF antenna mounted in the same location.
- o In Band 3 operation (225 MHz to 400 MHz) the antenna meets the requirements of the work statement when mounted in a fincap equipped with Pride and will perform at least as well as a standard UHF antenna mounted in the same location.

Antenna pattern data measured on the right vertical fin of the twin tail F-18 shows some degradation due to shadowing by the second tail. However, the pattern data indicates that the antenna can be used installed in this location and that satisfactory operation can be expected under most flight conditions.

2.0 TECHNICAL DISCUSSION

An antenna capable of operating from 100 MHz to 400 MHz was provided by NADC. It was an AN-320 Tail Cap Antenna manufactured by Adams Russell.

A duplicate model of the NADC furnished antenna was constructed which became the MCAIR prototype and was used for all test purposes. All modifications required to obtain Band 1 operation were tested on the MCAIR prototype antenna.

For convenience of documentation the 30 MHz to 400 MHz frequency range was divided in three bands with their associated frequencies being as follows:

Band 1 - 30 MHz to 100 MHz

Band 2 - 100 MHz to 225 MHz

Band 3 - 225 MHz to 400 MHz

All testing was performed on two scale models of the F-4 aircraft and on a 1/4 scale model of the F-18. A sectional full scale model of the F-4 was used for impedance, gain comparison and power measurements while a complete 1/5 scale F-4 model and a 1/4 scale F-18 model were used for antenna pattern measurements.

The full scale model consisted of an actual F-4 empennage mounted to a wood and screen wire center fuselage section and located on a platform 45 feet above ground level. It extended from a point just aft of the rear cockpit (Fuselage Station 192), to the aft of the vertical stabilizer (Fuselage Station 671.75), and from the right wingfold line (Buttline 160) to the left wingfold line. This model is shown in Figures 2 and 3.

The 1/5 scale model of the F-4, made of metal and metalized fiberglass, was mounted to the head of the antenna positioner 22 feet high, as shown in Figure 4.

The 1/4 scale F-18 model was a metalized fiberglass model. The right vertical stabilizer was replaced with a 1/4 inch metal plate which was shaped like the stabilizer except for the top 2 inches (full scale 8 inches) which were removed



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Figure 2 F-4 Model on Antenna Test Tower

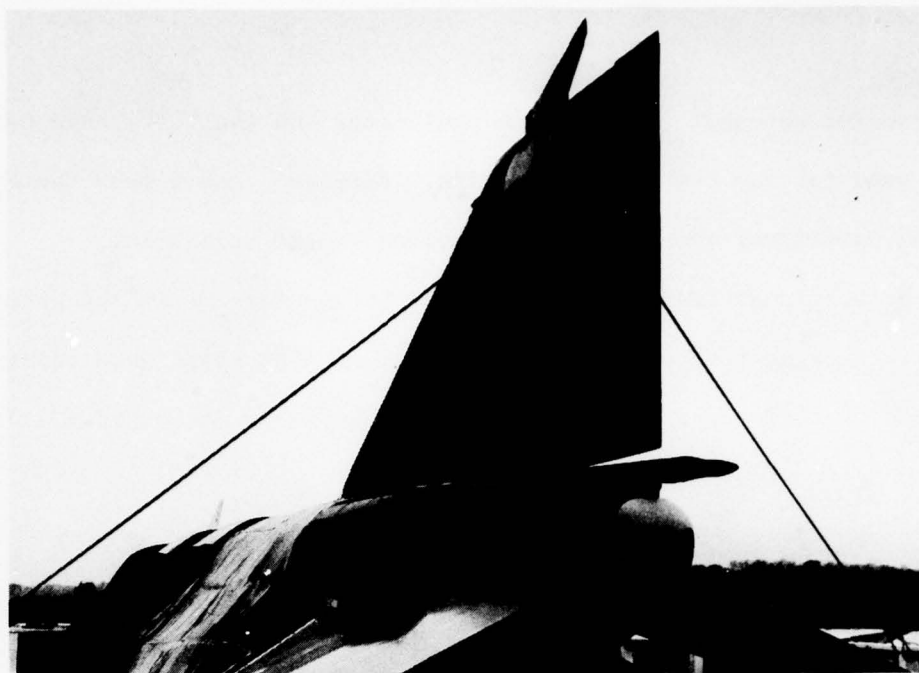


Figure 3 Antenna Model on Full Scale Mock UP

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Figure 4 Fifth Scale F-4 Model

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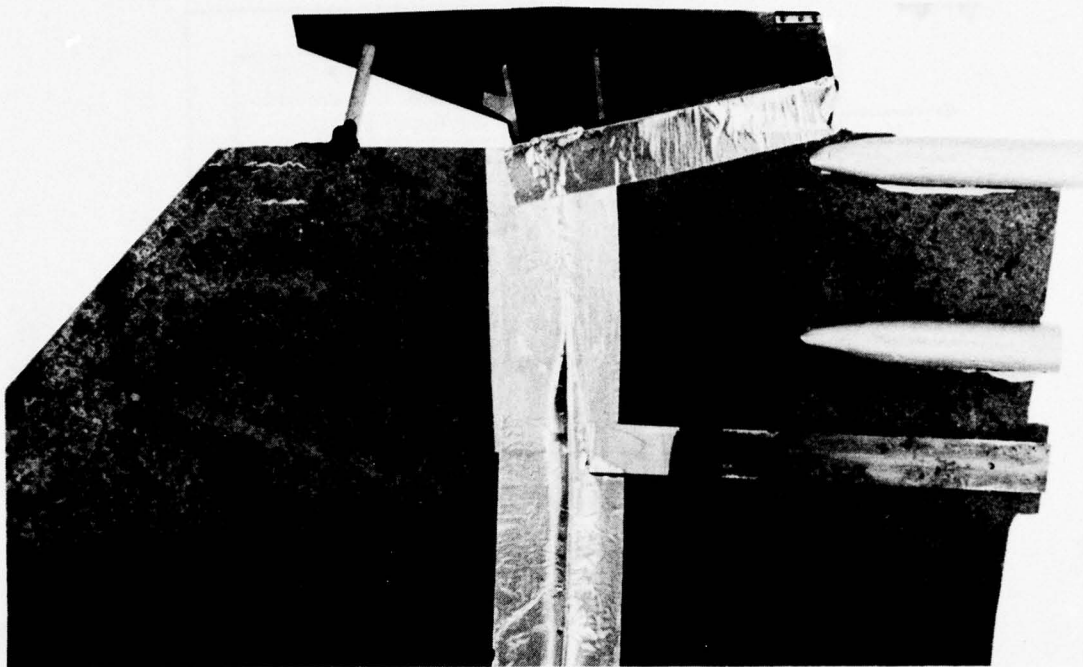
to mount the scaled antenna. The antenna positioner and the test range were the same as were used for the F-4 pattern testing. Figures 5 and 6 show the F-18 model on the antenna positioner and the antenna located on the stabilizer.

All of the pertinent test data is reported in the text or in the Appendices to this report. During the tests measurements of various types were interspersed but for the purpose of this report each type of measurement is described in a separate sub-section.



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Figure 5 Fourth Scale F-18 Model



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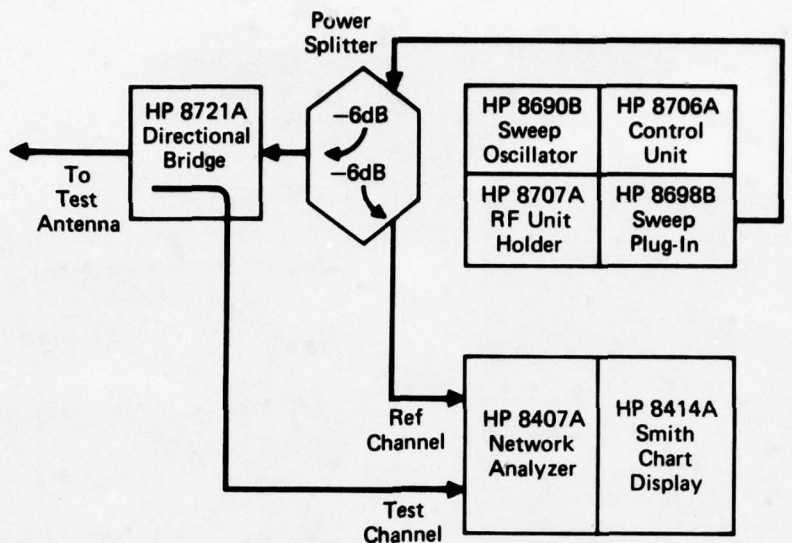
Figure 6 Multiband Antenna on Fourth Scale F-18 Stabilizer

2.1 Test Approach

Four types of tests were conducted during this design study. They are discussed below in the order in which they were largely conducted.

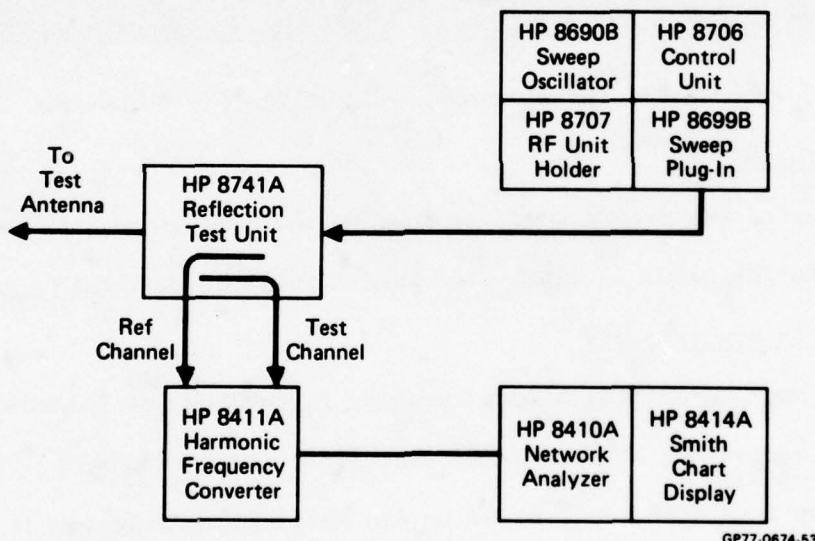
2.1.1 Impedance Measurements

The impedance measurements were recorded in the form of polaroid pictures of Smith Chart plots on two Network Analyzers. This provided a swept frequency plot over the entire frequency range of 30 to 400 MHz. Block diagrams of the two test setups are shown on Figures 7 and 8. The impedance measuring equipment and its operators were located inside of the aft fuselage model when the Smith Chart photographs were taken (see Figure 9). During the development of the antenna a closed circuit TV (CCTV) system was used to display the results of changes made to the antenna to the technical personnel responsible for changes. The TV camera was focused on the Smith Chart display in the model and the monitor was located outside the model within sight of the personnel standing at the base of the vertical fin.



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Figure 7 Frequency (30 to 100 MHz) Impedance Measurement Block Diagram

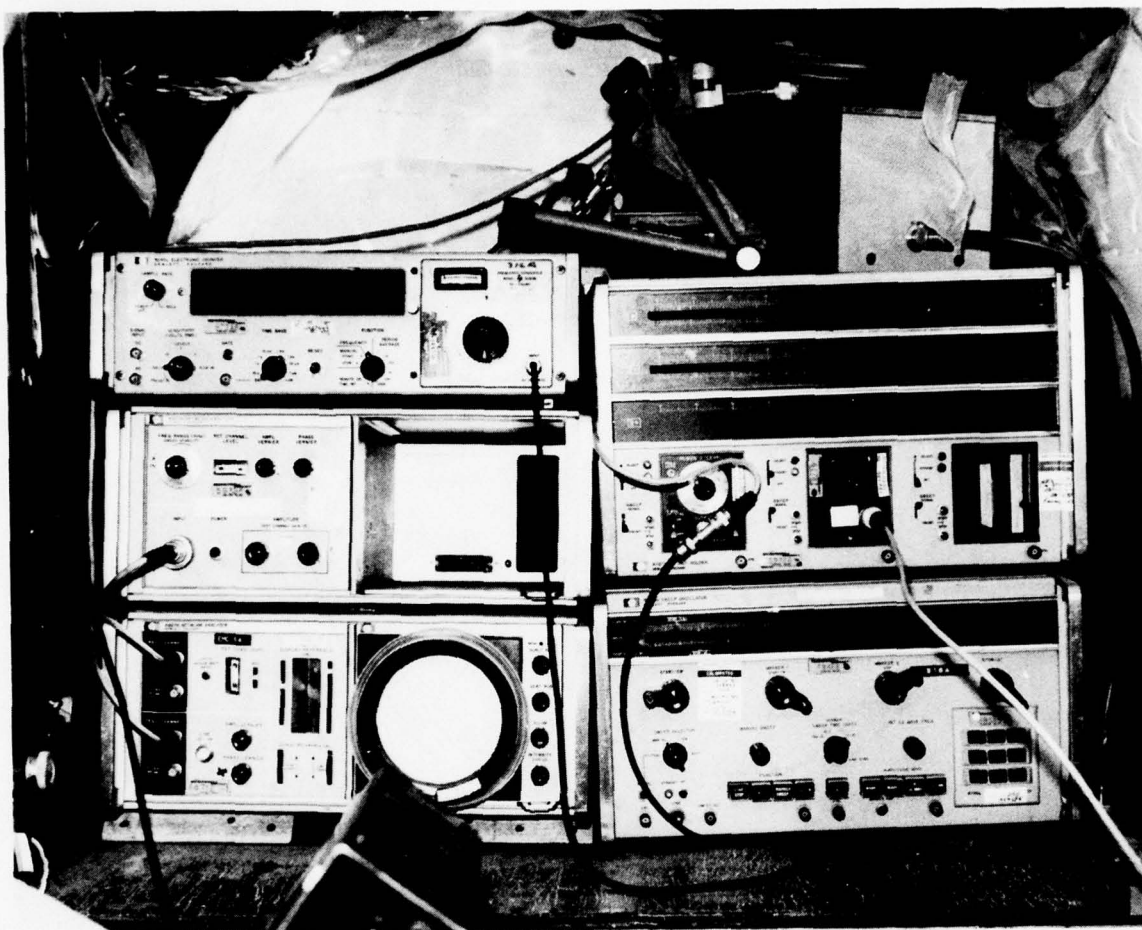


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Figure 8 Swept Frequency (100 to 400 MHz) Impedance Measurement Block Diagram

2.1.2 Antenna Pattern Measurements

The polar antenna patterns were measured with the scale models mounted to the head of an antenna positioner 22 feet high. The test was conducted on a 285 foot long ground level range. The model antenna was excited using a laboratory signal generator. The receiving antenna was a broadband log-periodic connected to a Scientific Atlanta 1600 receiver. Development patterns were recorded in the



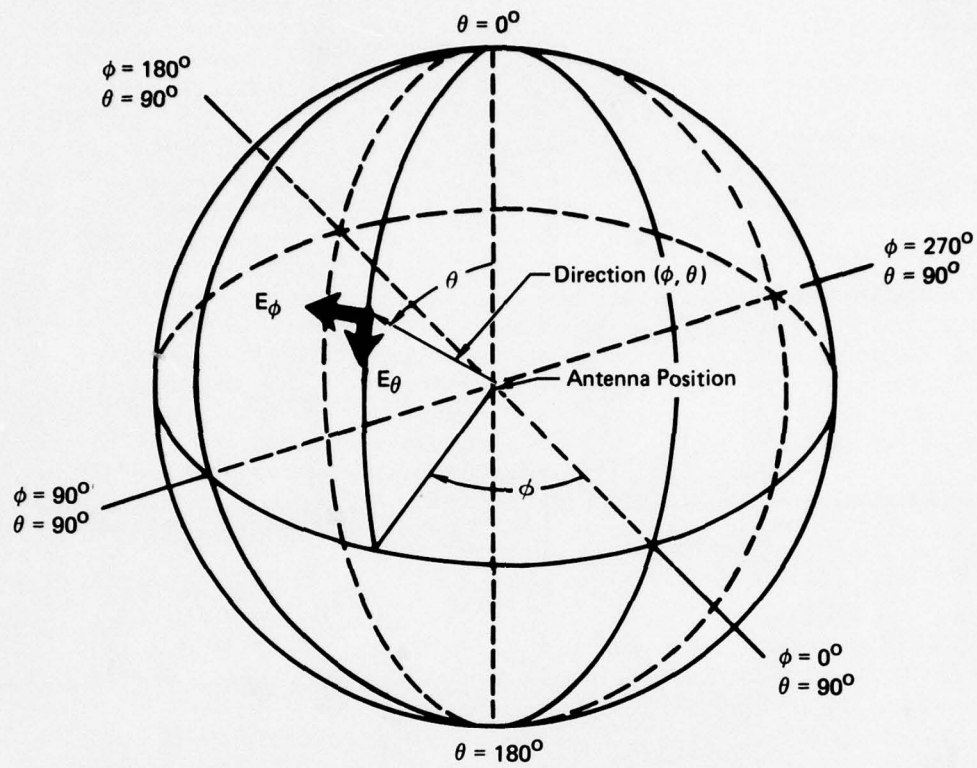
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Figure 9 Impedance Measuring Equipment

principal planes and at θ conical cuts at 60, 90, and 120 degrees. For each frequency, the E_ϕ and E_θ polarizations were measured. Test frequencies used during the F-4 pattern development test were 165, 380, 725, 1625 MHz which simulated full scale frequencies of 33, 76, 145 and 325 MHz. The frequencies were selected to provide patterns at the band edges of the VHF-FM band and mid band patterns for the VHF-AM band and UHF band while not interfering or being interfered with by local radio services.

Patterns were also recorded for final Configurations 29 and 30 at additional full scale frequencies of 42, 104, 174, 225 and 400 MHz with additional θ conical cuts of 30, 85, 95, 100 and 150 degrees. The coordinate system used for all pattern tests is shown in Figure 10.

Standard Antenna Coordinate System



Aircraft Coordinate System

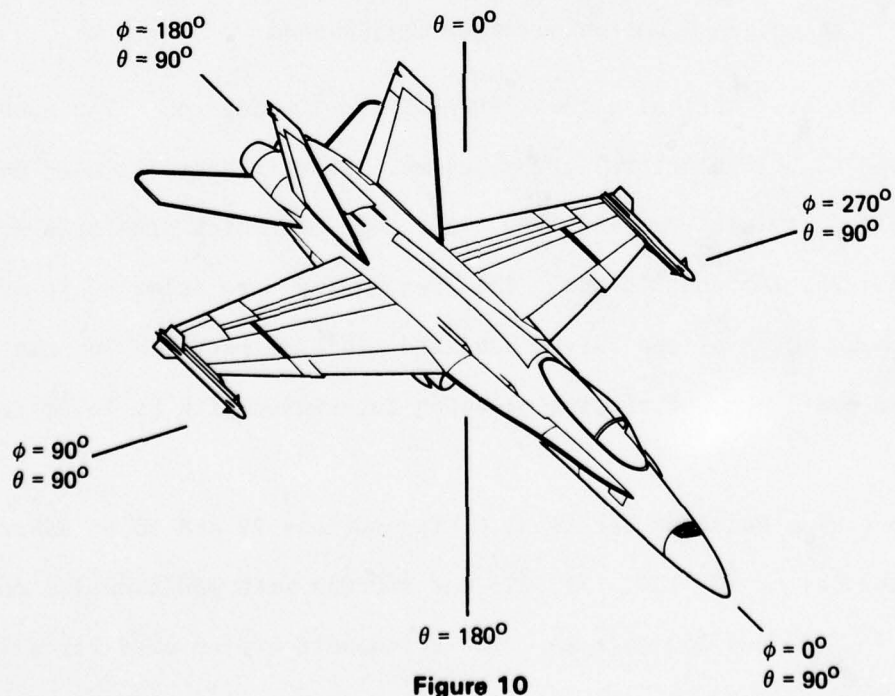


Figure 10

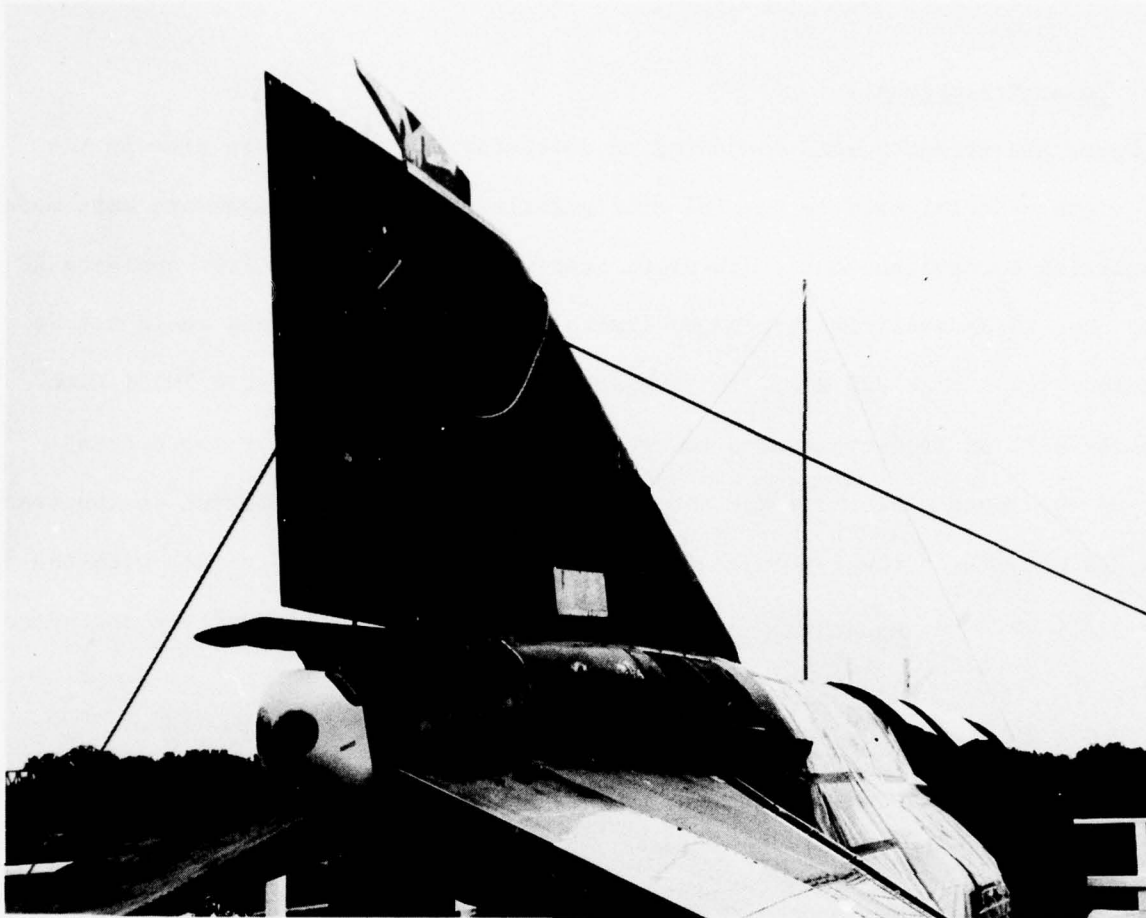
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2.1.3 Power Measurements

Power measurements were conducted to determine the temperature rise in the space cloth material used in several configurations. These measurements were made by recording the ambient and space cloth temperatures 3 minutes after applying RF power. Due to RF amplifier frequency limits the power measurements could not be conducted higher than 220 MHz. The temperature was measured using a "Mini Mite" pyrometer with an iron-constantan thermocouple junction located at the hottest point on the space cloth. It was observed that cementing the junction on the space cloth did not affect the impedance unless the wires made direct contact with the cloth. A thin layer of cement was therefore placed between the junction and space cloth.

2.1.4 Gain Comparison Measurements

Full scale gain comparisons were made using the F-4 impedance model on the 45 foot platform. Two antennas, a VHF-AM blade (Collins P/N 522-1135-012) and a UHF blade (Transco P/N 11D29900-1) were used as VHF-AM and UHF gain standards. The blades were located on ground planes as well as on the turtleback of the F-4 model with the VHF-AM blade at F.S.288 and the UHF blade at F.S.372. These antennas can be seen in Figure 11. The blade antennas and fincap antenna on the model were excited one at a time with a constant signal from a laboratory signal generator. A receiving antenna and laboratory field intensity receiver were located either at a 1000 feet ground level range or 100 feet away from the model but 45 feet high at various ϕ angles near 90 degrees. The 100 foot measurements were done using a Pitman 50 foot fiberglass aerial bucket providing a co-altitude range. The signal level at the various ϕ angles was recorded at the receiver while using the fincap antenna and blade antennas alternately as transmitters. Dipole antennas located on the antenna tower were also connected to the signal generator and used for a gain comparison. Gain comparisons for the VHF-FM band were determined in a similar manner using $1/4$ wavelength monopoles located on the F-4 turtleback as reference



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Figure 11 Standard Gain Antennas on F-4 Model

antennas. A second method was used to determine the gain of the fincap antenna using the standard range equation

$$W_R = \frac{W_t G_t G_R \lambda^2}{(4\pi R)^2} \quad (1)$$

In logarithmic form, solving for the transmitting antenna gain, this becomes

$$g_t = P_R - P_t - g_r + L_s \quad (2)$$

where $L_s = \text{Space Loss} = 20 \log \frac{4\pi R}{\lambda}$

Adding cable losses at the transmitting antenna (L_{TC}) receiving antenna (L_{RC}) and mismatch loss of the receiving antenna (L_{MR}) the equation becomes

$$g_t = P_R - P_T - g_r + L_s + L_{TC} + L_{RC} + L_{MR} \quad (3)$$

The mismatch loss at the transmitting antenna was not considered since this was considered to be a characteristic of the antenna under test.

2.2 Impedance Measurements

Impedance measurements were taken on 29 of the 31 configurations. Measurements were first made on the basic 100 MHz to 400 MHz antenna followed by exploratory measurements and variations on impedance matched antennas.

2.2.1 Basic Configuration

Once the basic antenna was built, impedance measurements were made on the NADC antenna and the unmodified MCAIR prototype to determine similarity. This data is shown in Figures 12 and 13 and it can be seen that the MCAIR antenna is representative of the NADC antenna. The impedance plots are practically overlays and show that both antennas are good in Bands 2 and 3, but are poor in Band 1. From this point on, the full scale NADC antenna was not used in the test program.

The sequence of events that went into the design of the multiband antenna is recorded in the Configuration Log, Appendix A with Configuration 1 representing the basic antenna as it was provided by NADC and Configuration 2 being the MCAIR duplicate. Both of these configurations were mounted on the vertical stabilizer of the F-4 without a fincap. The installation of the NADC antenna is shown in Figure 14. Configuration 3 added the fincap, which was found to have little effect on the installation. In Configuration 4 the Pride waveguide and tail light wiring were added with the fincap removed. This became the basic test configuration. The data for this configuration given in Figure 15 showed an appreciable change of impedance in Bands 2 and 3, raising the VSWR to 4:1.

It is desirable for the antenna to have a constant VSWR regardless of the surrounding structure. In an attempt to shield the antenna from various structures such as the tail light wires and waveguide and obtain a constant VSWR a grounded metal strip was placed between the antenna and the tail light wiring. The results of this change (Configuration 5) showed a further change in VSWR. The waveguide and tail light wires were removed in Configuration 6 and another considerable change

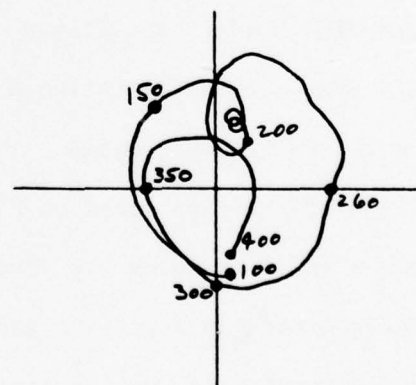
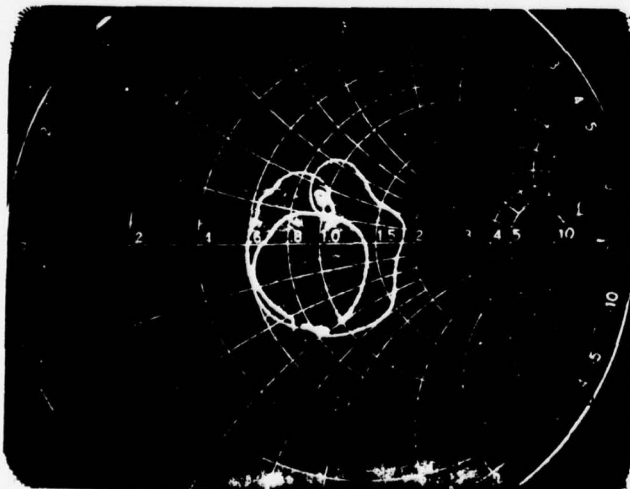
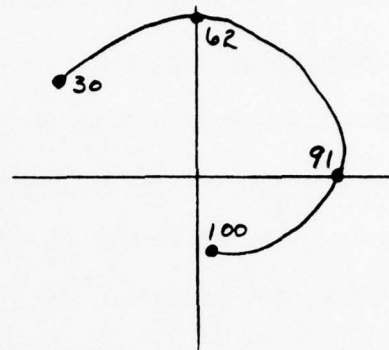
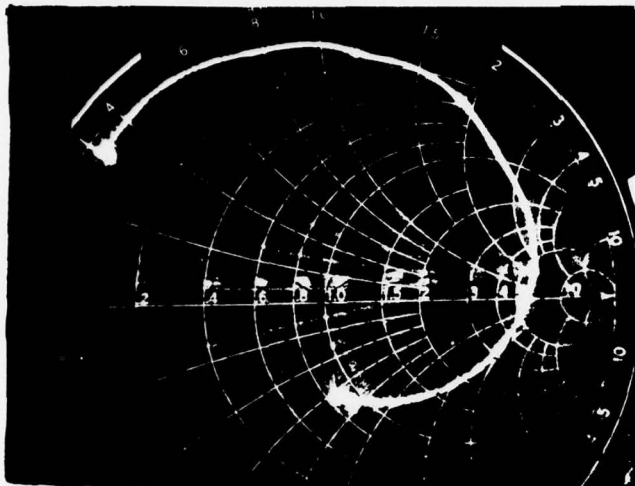
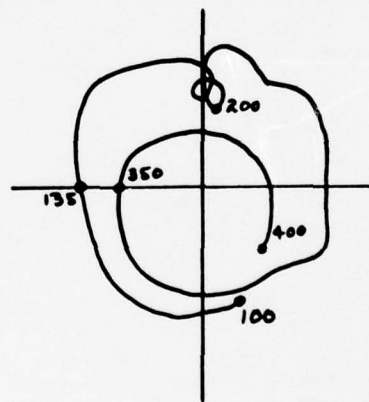
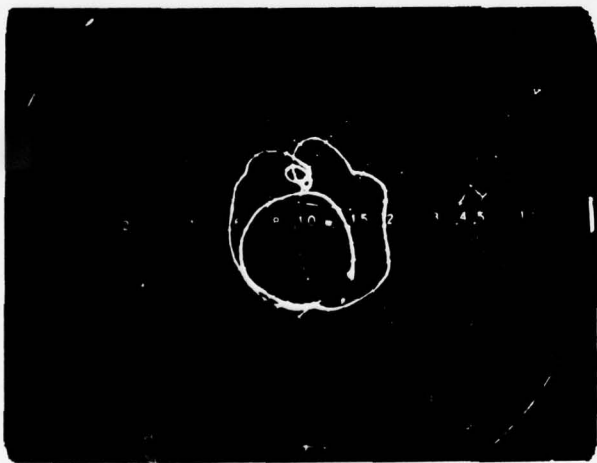
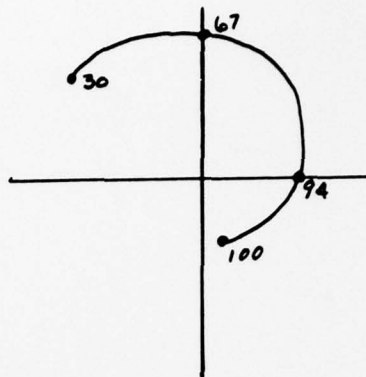
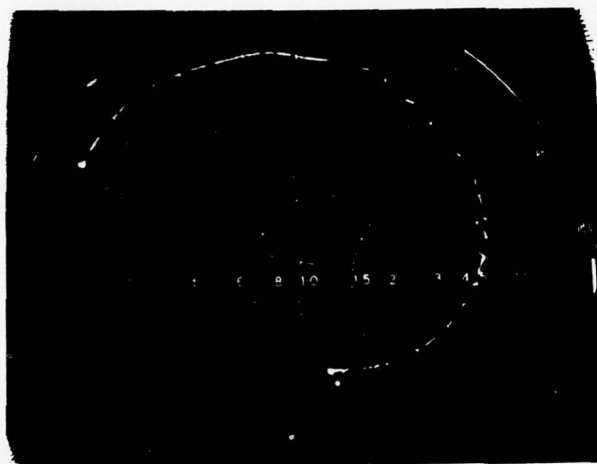


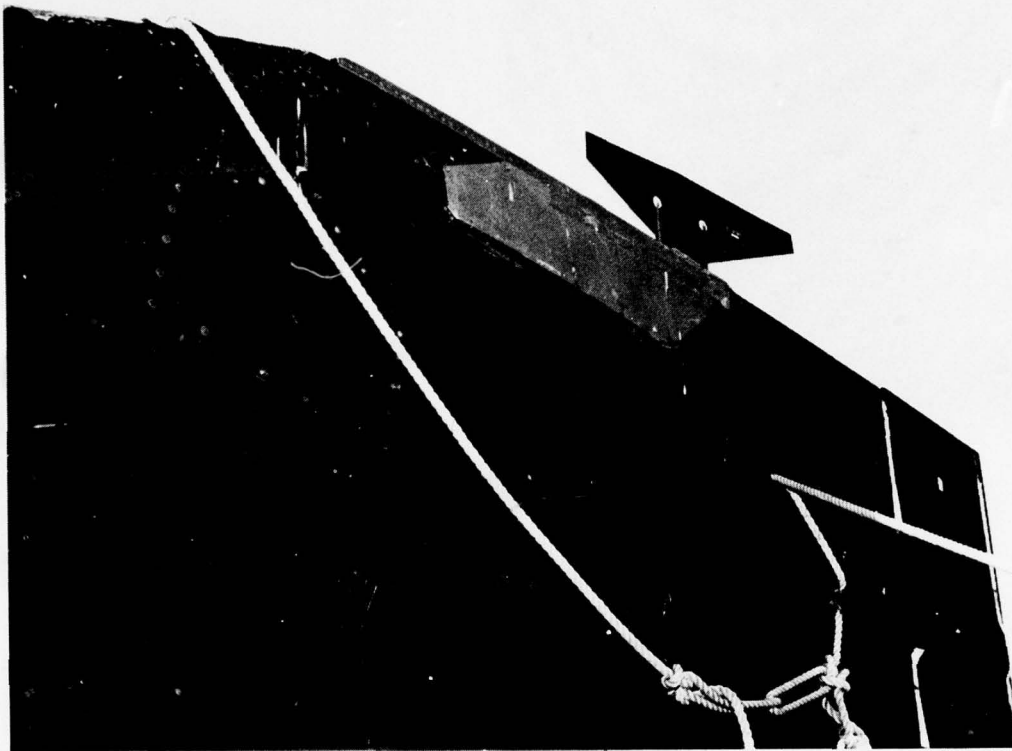
FIGURE 12
IMPEDANCE PLOTS OF NADC ANTENNA, CONFIGURATION 1

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GP77-0674-11

**Figure 13 Impedance Plots of MCAIR Prototype Antenna
Configuration 2**



GP77-0674-12

Figure 14 NADC Antenna on Full Scale Mockup

was noticed. Because of the continuing changes in the data, the use of a shielding strap was abandoned.

The basic antenna has a movable tuning block located near the antenna feedpoint. In order to determine the effect of this device it was first moved to its extreme positions and was then completely removed. Data taken with the block removed is recorded as Configuration 7. This test showed that a change in the block position primarily changes the phase of the signal. The tuning block was replaced and used for tuning as required during the test program.

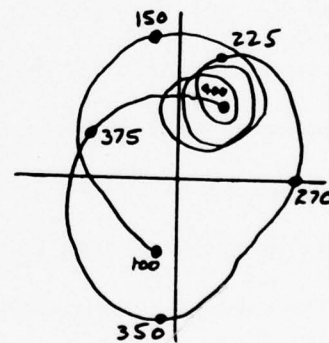
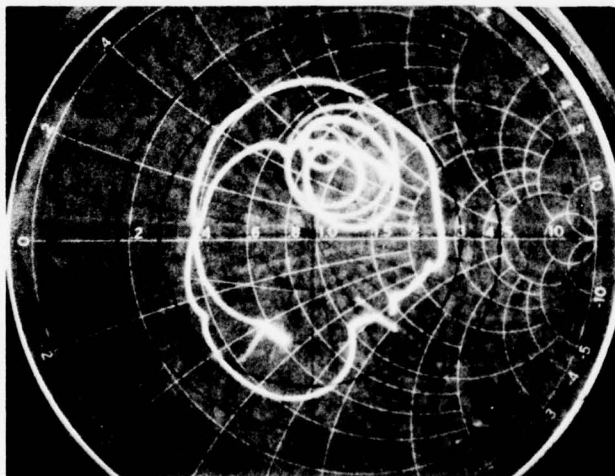
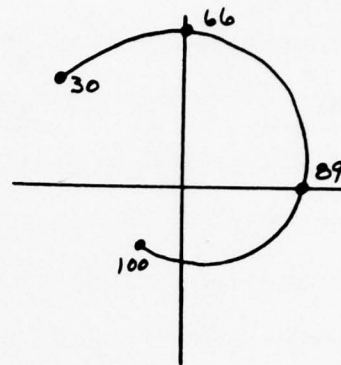
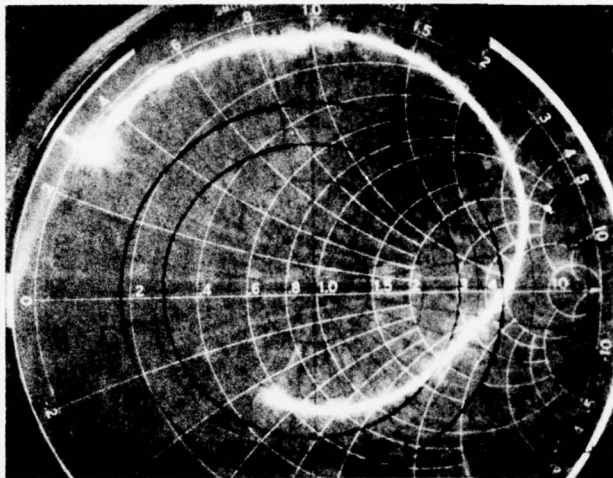


Figure 15 Impedance Plots
Configuration 4

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2.2.2 Exploratory Configuration

Since improvement was needed at the lower frequencies, it appeared that the antenna needed to be physically and electrically enlarged. This was done by extending both ends of the antenna using adhesive backed copper tape. The resulting change in impedance is noted in Configuration 8. For Band 1 the change was favorable, for Bands 2 and 3 it was detrimental.

As the next step the effect of an existing loading coil was investigated. The antenna was provided with a 3 1/2 turn, 1/2 inch diameter coil, attached to the radiating element near the antenna feed point and terminated to ground. This coil was removed with the resulting impedance data for this condition reported in Configuration 9. The most significant change noted was a large phase change for Band 1. Configurations 10 and 11 were devoted to trying 5 1/2 and 7 1/2 turn coils respectively. The impedance plots of these configurations indicate similar performance to Configuration 8. No significant change or improvement was obtained by changing the loading coil.

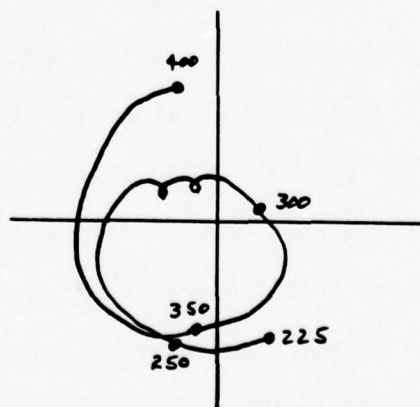
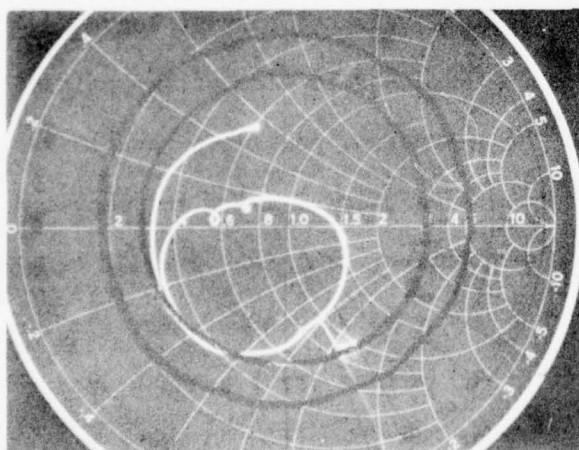
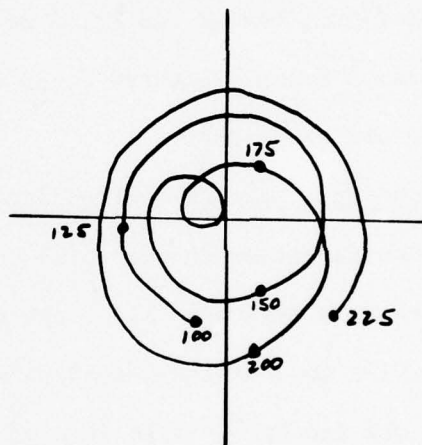
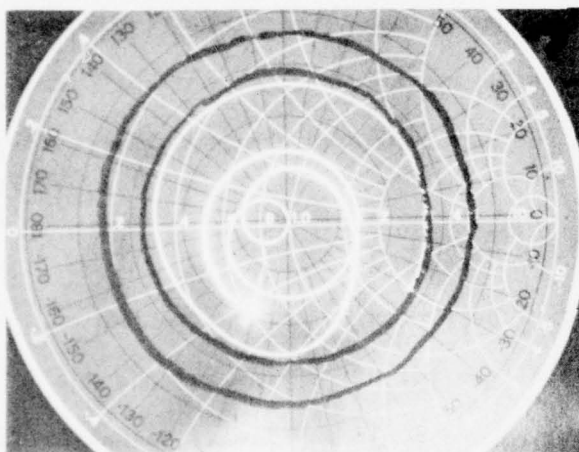
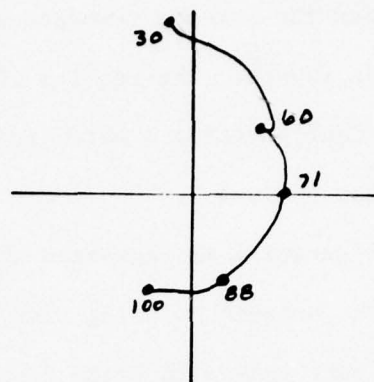
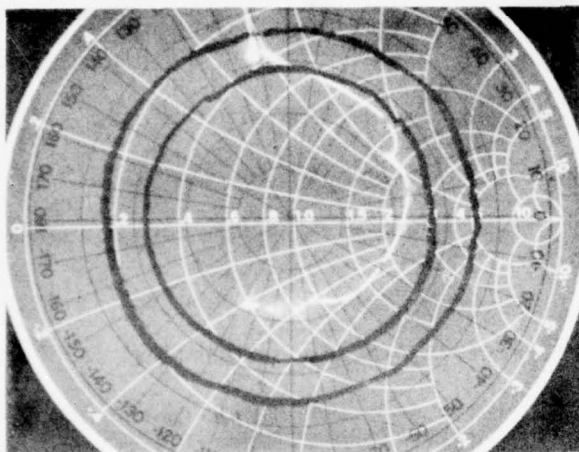
Up to this point in the study, none of the changes had improved antenna performance or even showed promise of improvement. Therefore, a different approach was explored which was to isolate the added-on sections of the antenna and connect them to the basic antenna with 1/4 wavelength coaxial chokes. In addition, the basic antenna was divided into three segments to provide operating segments for each of the three frequency bands. The idea behind the coaxial chokes was to make these segments appear as if they were connected or disconnected to each other depending upon the operating frequency. The resonant lengths of the chokes were 141 MHz and 310 MHz, the centers of operating Bands 2 and 3. The results of these tests are given in Configurations 12 through 16 and indicate that performance was degraded. It was concluded that the chokes were too narrow in bandwidth and therefore did not give the desired performance. This approach was therefore also abandoned.

In Configuration 17 three of the four chokes were shorted out by placing metal foil across the antenna segments and changes were made to the loading coil and the capacitive tuners. The results of this configuration once again were similar to those of Configuration 8 which indicated that the antenna needed to be enlarged for improvement of Band 1.

Configuration 18 segmented the extended sections of the antenna and connected them to the antenna by using five turn coils. This improved Band 1 performance, but degraded performance in Bands 2 and 3. In an attempt to improve Bands 2 and 3 the capacitive tuners were changed, which produced some improvement (see Configuration 19). Additional tuning was tried with the coils and increased capacitors but it was impossible to bring all three bands within the specification limits. The approach was therefore abandoned.

2.2.3 Impedance Matched Configurations

In Configuration 20 the coils connecting the prototype antenna to the extensions were removed. Also, the extension from the aft of the antenna was removed while the forward extension made as long as could physically be and still fit into the fincap. A 5/16 inch gap was left between the basic antenna and the extension and both were located on the same side of a printed circuit board. A 5 inch long by 2 inch wide section of tape on the opposite side of the printed circuit board overlaps both the antenna and the extension, providing capacitive coupling. This configuration had good performance in Bands 2 and 3 and showed promise for Band 1. While experimenting, it was noticed that Band 1 could be made to meet specifications if resistance was added to the antenna extension. It was also noticed that the resistance had very little effect on Bands 2 and 3 operation. A 100 ohm resistor was added to the forward tip of Configuration 20 which then satisfied the impedance requirements of the NADC specification for the total frequency band. This impedance data is given in Figure 16.



**Figure 16 Impedance Plots
Configuration 20**

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Further refinements to Configuration 20 were made by adjusting the capacitive tuning strips that are part of the basic antenna and by moving the extended section of the antenna to the opposite side of the printed circuit board with a 3 1/2 inch overlap over the basic antenna. The value of the resistor was also increased to 577 ohms. Additional experimentation permitted shortening the extension to about 17.5 inches beyond the basic antenna and replacing the resistor with a piece of SC 377 space cloth. This was done in Configurations 21 and 22. Configuration 22 impedance data, which meets the NADC specification, is shown in Figure 17. The overall length of the antenna was 43 inches and its height was 10 inches, which is suitable for mounting in the F-4 fincap. Figure 18 is a sketch of this antenna configuration.

In order to analyze resistance characteristics for the space cloth the width of the piece used on the antenna was decreased from 4.9 inches to about 2.4 inches. This change increased the resistance of the space cloth and also improved the impedance in Band 1. In Bands 2 and 3 a phase shift was observed but there was no major change in the impedance. This became Configuration 23 which provided insight for resistance values used on additional configurations.

The tail light wiring was rerouted at this point of the program to improve antenna operation. It was determined from gain comparison measurement that the tail light wires located near the antenna caused a decrease in antenna gain. The wiring change improved the gain and had no effect on the impedance of the antenna.

2.2.4 Antenna Size Reduction

The antenna from Configuration 23 was too large to be used on the F-18 and the AV-8A. Testing was therefore continued for the purpose of decreasing the forward extension while maintaining the electrical characteristics of Configuration 23. This goal was achieved with Configuration 24. In this configuration the extension was triangular in shape which extended 9 inches beyond the basic antenna. The

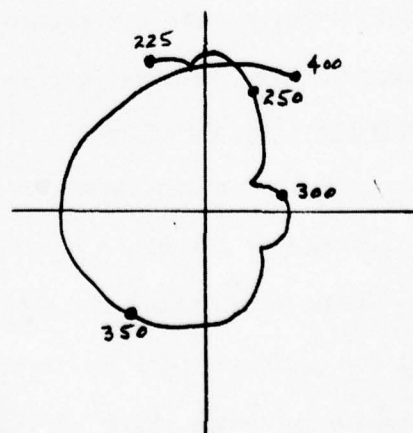
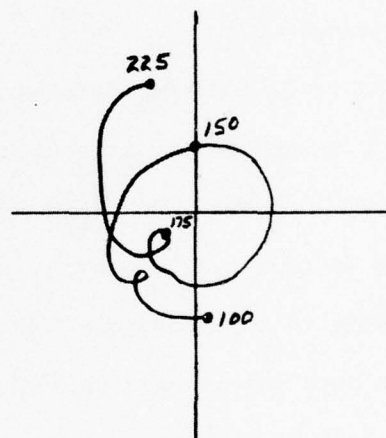
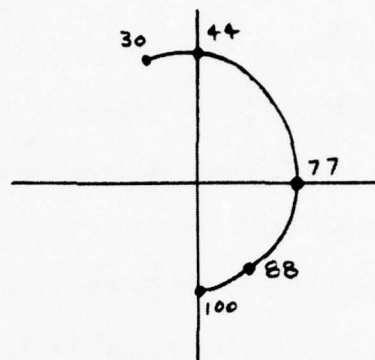
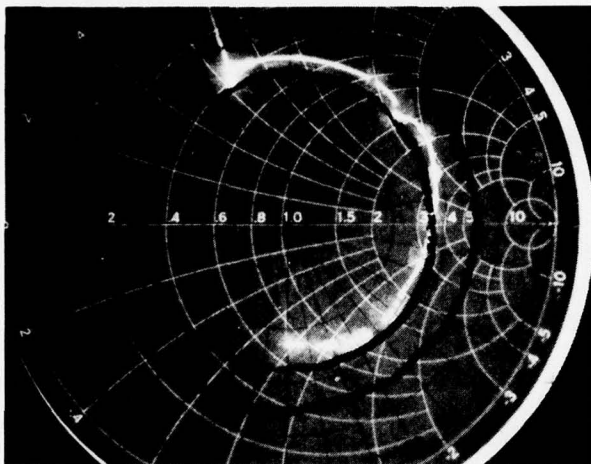
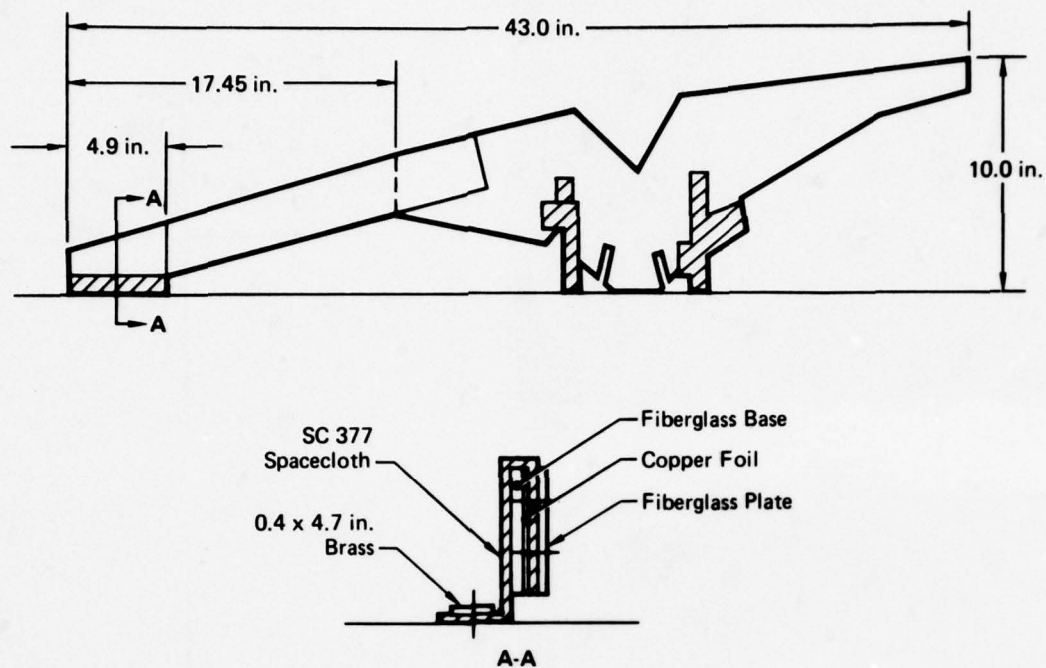


Figure 17 Impedance Plots
Configuration 22

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GP77-0674-16

**Figure 18 Multiband Antenna
Configuration 22**

impedance characteristics of this antenna, measured on the F-4 full scale mock-up, were excellent, and are shown in Figure 19. A sketch of Configuration 24 is given in Figure 20.

One further size reduction was attempted and is given as Configuration 26. For this antenna the extension was completely removed and a capacitively coupled strip was placed vertically across the forward end of the antenna. The strip was terminated to the base of the antenna through a 2 inch wide piece of SC-100 space cloth. The impedance of this configuration was good but overall antenna performance was not as good as that of Configuration 24.

Configuration 28 was similar to Configuration 24 except that the space cloth routing was slightly changed. A piece of Eccofoam was placed between the antenna extension and the space cloth. This was done to improve power handling of the space cloth, as will be explained in Section 2.3.

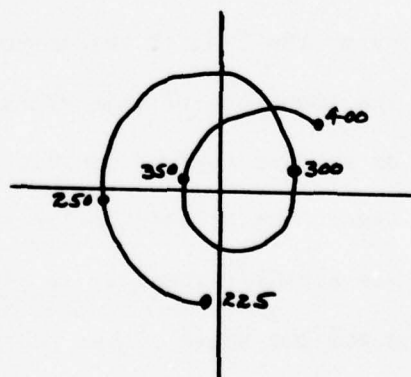
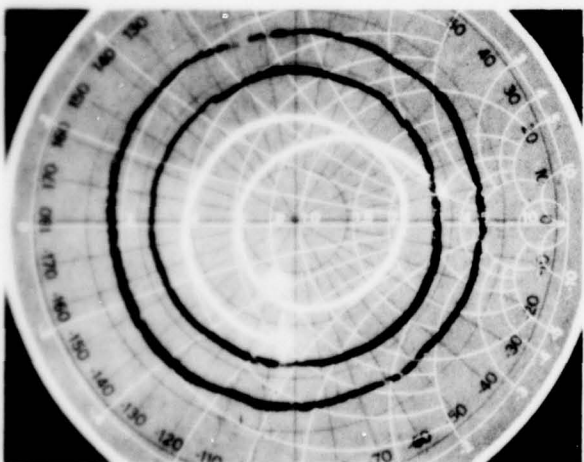
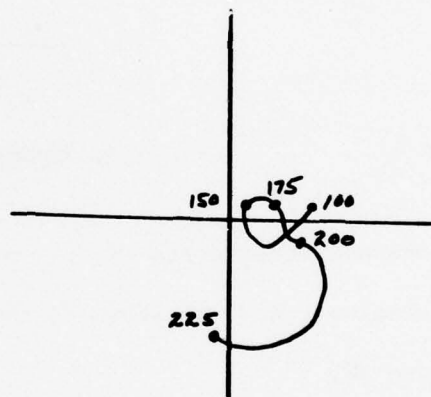
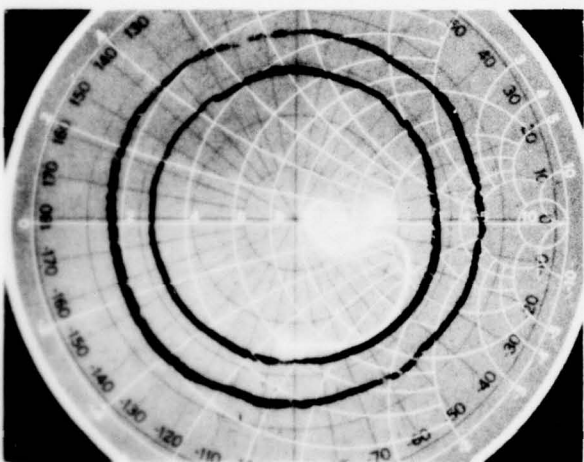
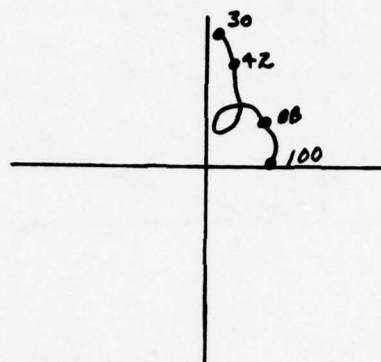
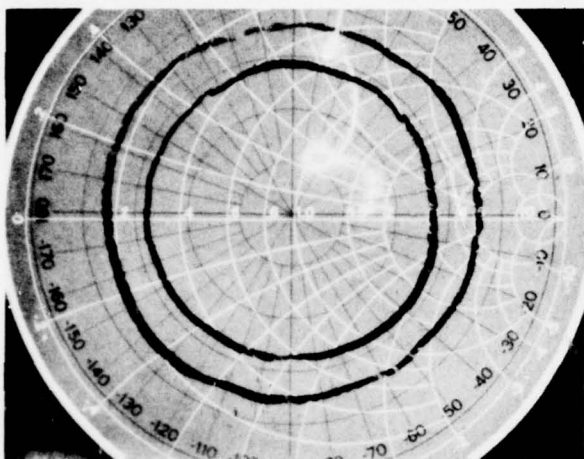
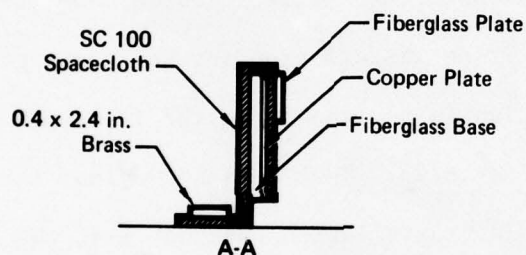
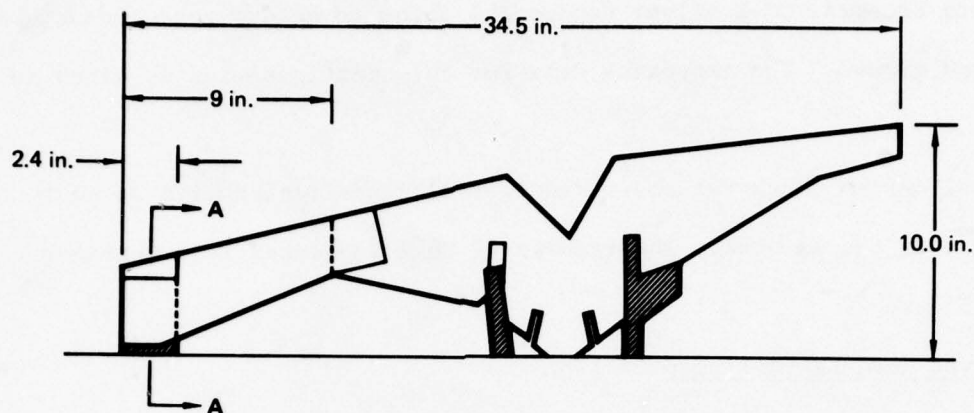


Figure 19 Impedance Plots
Configuration 24

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GP77-0674-18

**Figure 20 Multiband Antenna
Configuration 24**

2.2.5 Final Configuration

Configuration 29 was the final design. It is the same as Configuration 28 except that the fiberglass material of the printed circuit board is changed to Teflon. All previous configurations used an antenna layed up on a fiberglass board with a dielectric constant between 4 and 5. Configuration 29 used an etched Teflon board with a dielectric constant of 2.23. The aluminum support angles extended the full length of the antenna base and the forward end of the basic antenna was lengthened about 2 3/4 inches to adjust for differences in coupling capacity due to the change

to the Teflon support structure. The contact area of the SC-HT-377 space cloth was coated with Eccocoat CC-2 silver conductive paint to ensure good contact between the antenna and ground. The impedance data for this configuration is given in Figure 21.

As a final design check the above configuration was tested with an empty fincap placed over the antenna. The results of this impedance test Configuration 29A are shown in Figure 22.

2.2.6 Prototype Antenna in Fincap

Configuration 31 is the same as Configuration 29 except that the antenna has been mounted in a fincap and the fincap has been filled with low dielectric foam. The Pride simulation in Configuration 29 was not included in Configuration 31 since it was impractical to include the Pride installation in the fincap provided by NADC. The absence of the Pride installation is noticeable in the impedance data of Configuration 31 and is shown in Figure 23. This data shows that the antenna mounted in a fincap without the Pride installation does not meet the specification above 375 MHz. To demonstrate that the out-of-specification condition is caused by the absence of the Pride installation, metal foil was taped to the outside of the fincap in a location representative of the Pride waveguide. The results of this test are given in Configuration 31a, Figure 24. This data shows that the antenna with externally simulated Pride again meets the specification. Since the F-4B and J aircraft are equipped with Pride the antenna as designed is suitable for F-4 retrofit. All materials and processes used for their final assembly has been approved as being flightworthy.

2.3 Antenna Pattern Measurements

The antenna pattern testing required for the antenna development was conducted on the 1/5 scale F-4 model. The final configuration of the antenna was tested on both the 1/5 scale model of the F-4 and 1/4 scale model of the F-18. All of the

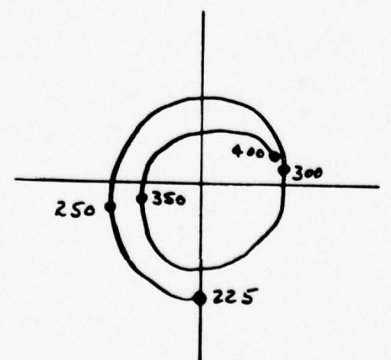
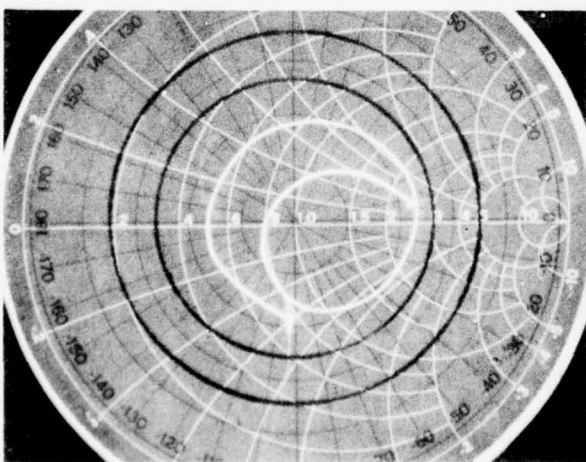
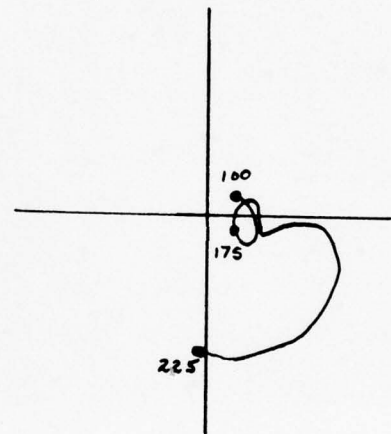
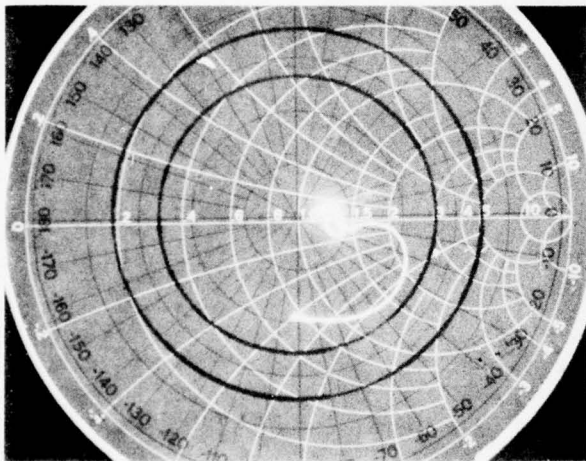
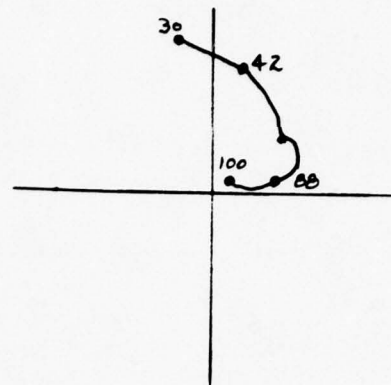
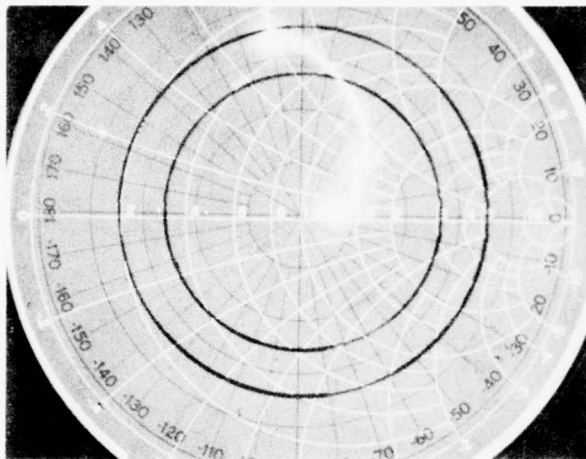


Figure 21 Impedance Plots
Configuration 29

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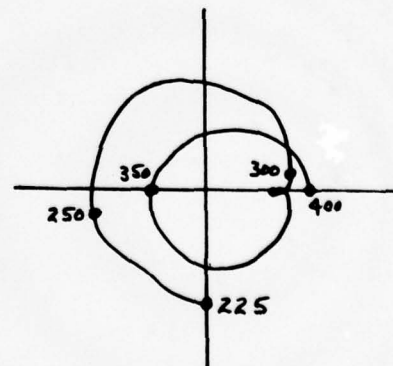
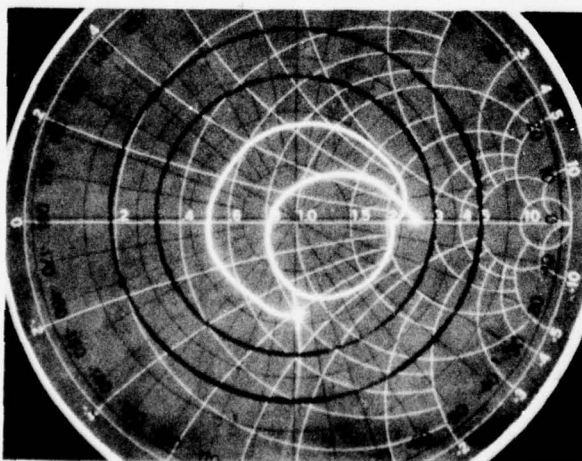
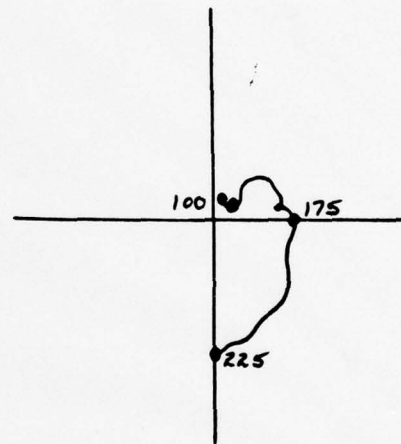
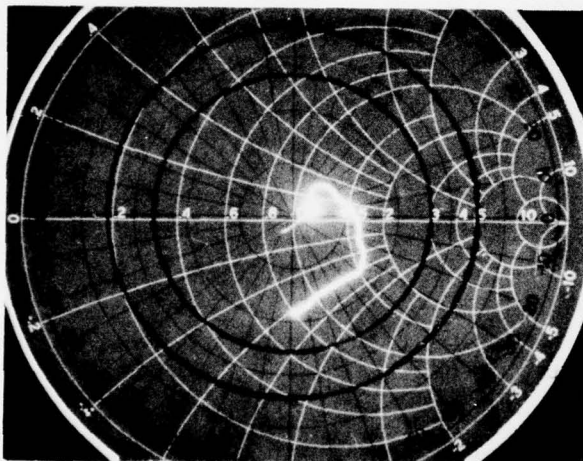
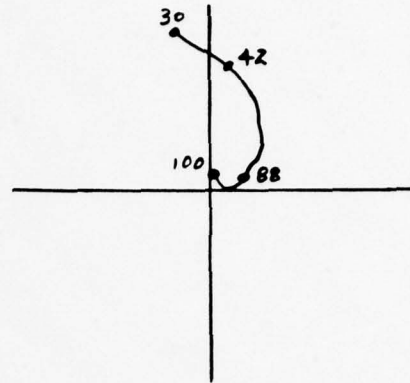
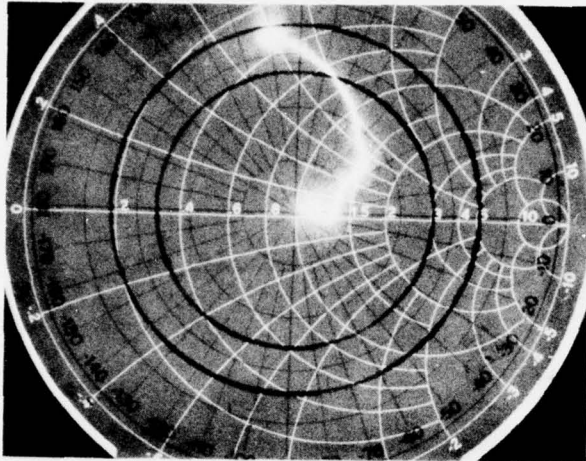


Figure 22 Impedance Plots
Configuration 29A

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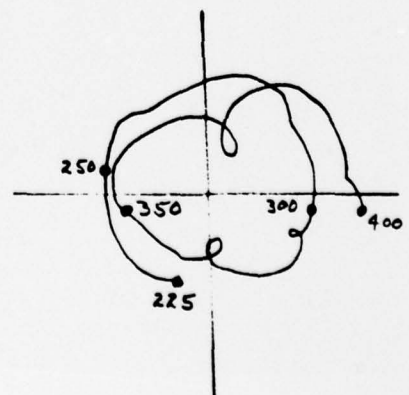
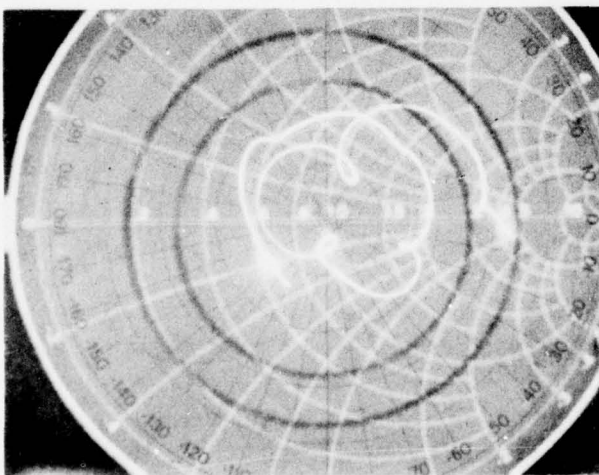
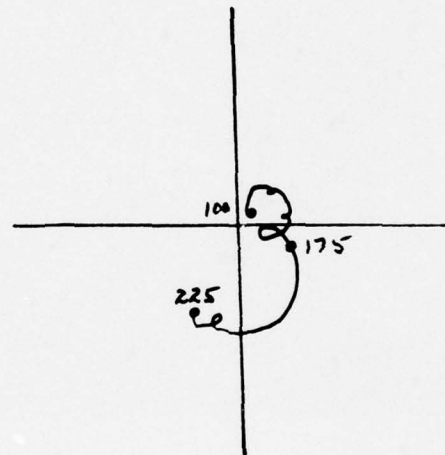
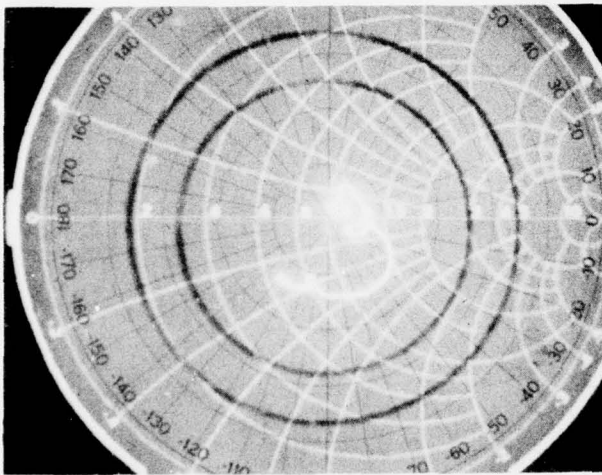
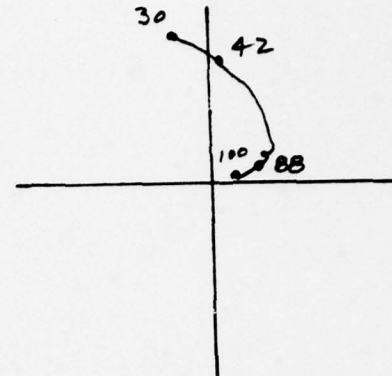
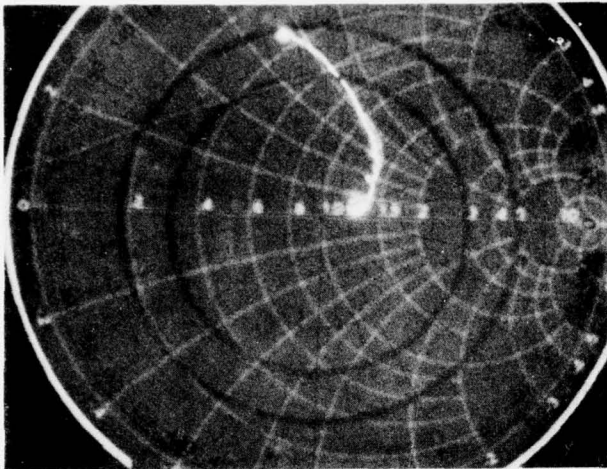


Figure 23 Impedance Plots of Final Antenna Foamed in Fin Cap Configuration 31

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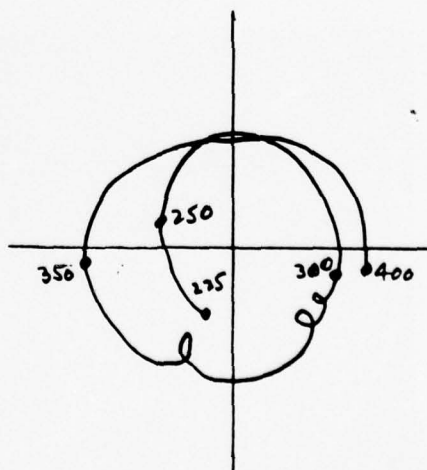
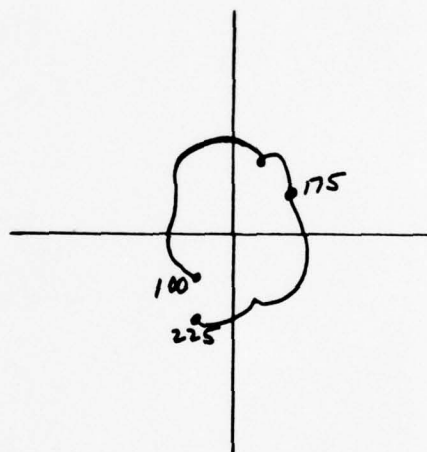
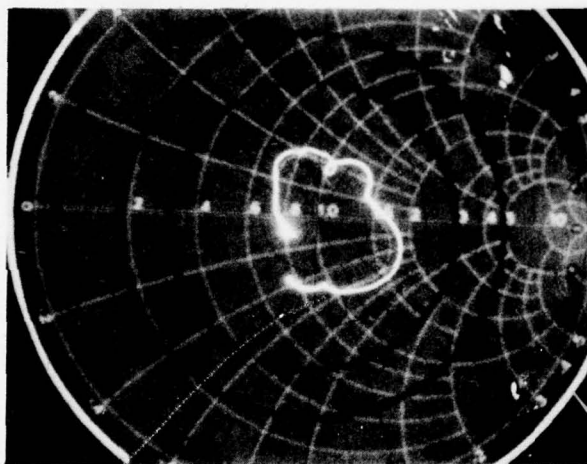
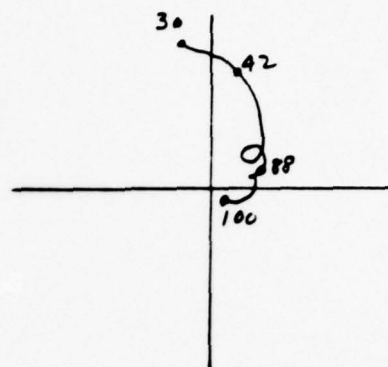
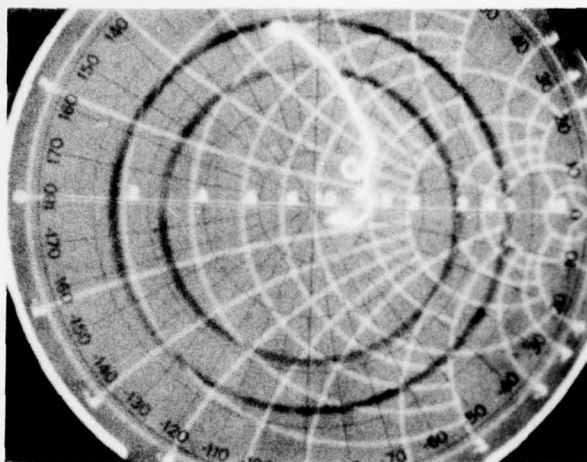


Figure 24 Impedance Plots of Fnal Antenna in Fincap with Simulated Waveguide Configuration 31A

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significant pattern data is included in this report (Appendix B for the F-4 and Appendix C for the F-18).

Limited testing was performed on the antenna provided by NADC in order to establish basic antenna patterns for the multiband antenna. Complete pattern sets were not measured until configurations were established which were potential candidates for the final antenna configuration.

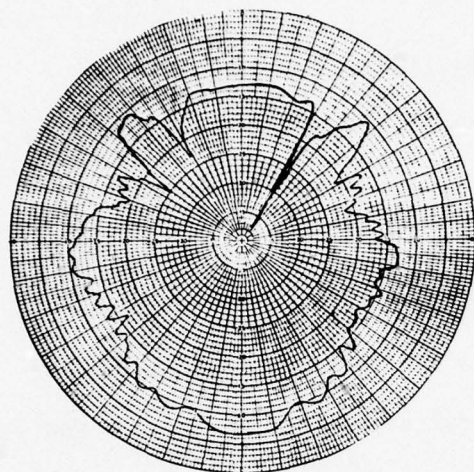
2.3.1 F-4 Antenna Pattern Testing

A 1/5 scale model of the AN-320 Tail Cap Antenna was provided to MCAIR under the contract. This antenna was mounted on the vertical stabilizer of the F-4 and its pattern characteristics were measured in the UHF band (Band 3). This pattern data is shown in Appendix B, Configuration 1. The data obtained shows that the patterns are typical for a UHF antenna located on the vertical stabilizer of an F-4.

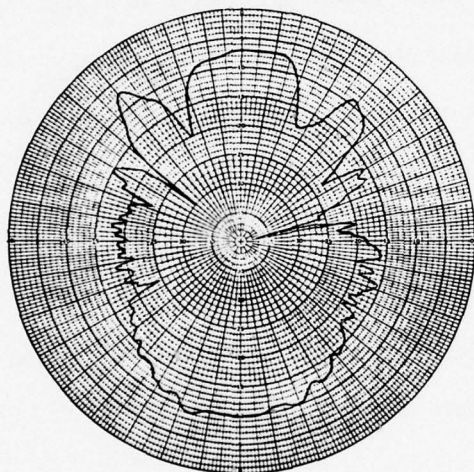
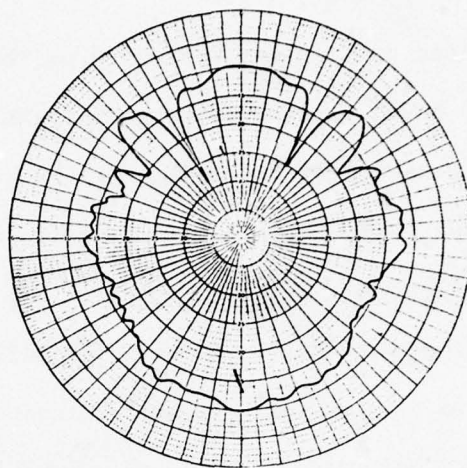
The tail light wiring and the Pride waveguide were modeled and added to the stabilizer. This is representative of Configuration 4 and was the second configuration used during pattern testing. In Band 3 of this configuration the patterns were very similar to the patterns previously measured in Configuration 1, which indicated no significant effect on scale model pattern due to the tail light and Pride waveguide.

In order to relate this data to data taken on another program during the initial Pride installation, Configuration 4 was compared to data from a UHF blade antenna mounted at the same location. The pattern characteristics of the two antennas were very similar showing that this antenna performs as well as a conventional blade in this location. A comparative sample of these antenna patterns is given in Figure 25.

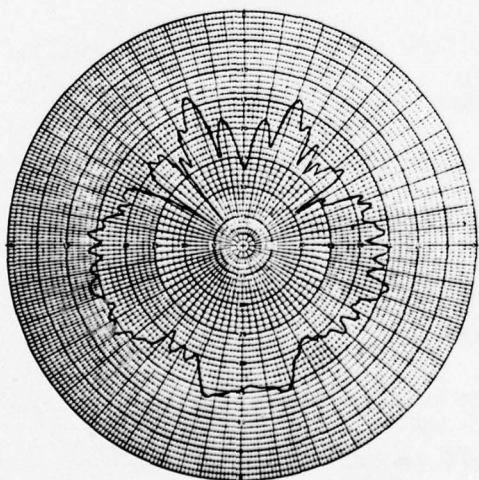
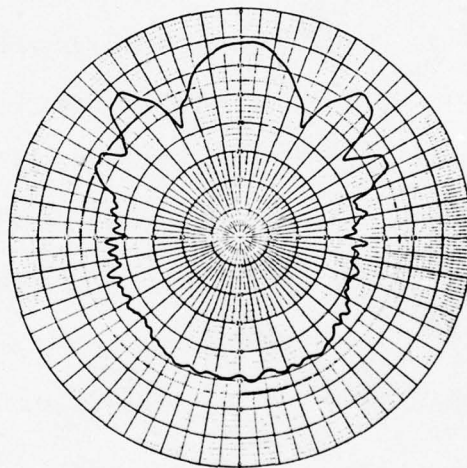
Data was measured for Band 2 of Configuration 4 and also compared to Band 2 data taken on a different VHF antenna. Once again, the pattern characteristic of the two antennas were similar. Based on the measurements it is expected that the performance of the Multiband antenna will be equivalent to the performance of present UHF blades for Band 3 or to the performance of VHF blades for Band 2.



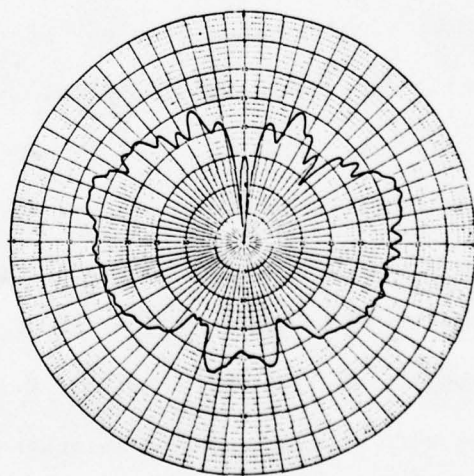
$\theta = 60^\circ$



$\theta = 90^\circ$



$\theta = 120^\circ$



Multiband Configuration 4

UHF Blade

Figure 25 Antenna Pattern Comparisons

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Band 1 patterns were measured on Configuration 4 even though this configuration was known to have a high impedance in this band. It was felt that the radiation characteristics of the antenna would be representative of patterns from any antenna installed on the stabilizer and would give a general indication of Band 1 performance from this location. These patterns are included in Appendix B.

Configuration 24 was the first configuration that was suitable in size and had impedance characteristics meeting the NADC specifications. Sufficient pattern data was measured on this configuration to show that the antenna would provide the required coverage. This data is included in Appendix B. Comparing data from Configuration 24 to available data of Configuration 4 shows that the antenna coverage is improved for Configuration 24 for all three operating bands. The antenna used for this test consisted of a MCAIR-made 1/5 scale model of the AN-320 antenna. This model was made to properly simulate the spacing between the capacitively coupled section of the antenna and the basic antenna. To properly simulate the capacitive coupling, the spacing had to be 0.010 inch.

Configuration 25 was used to determine the effect of moving the tail light wires down. The pattern data showed no change between this configuration and Configuration 4, even though gain measurements on the full scale model showed a change. Since pattern data did not show a degradation, the tail light wires were left in the lower position.

Configuration 26 patterns showed performance which was equivalent to Configuration 4. However, this configuration was not explored in detail, since power measurements indicated excessive heating in this configuration.

Exploratory measurements were made on Configuration 27 to determine the effect of the laminated fiberglass board. The configuration was the same as Configuration 25 except that the fiberglass board was removed and the antenna consisted of a freestanding metal foil. Pattern differences between Configurations 25 and 27 were

noticed when both were measured at the same frequency. The patterns could be made to look alike by slightly shifting the test frequency of Configuration 27. From this experiment it was concluded that the dielectric constant of the printed circuit board influenced antenna performance and should be controlled.

A Teflon base material with a dielectric constant of $K = 2.23$ was selected for the next configuration. This material was available in various thicknesses and 1/5 and 1/4 scale model antenna could be made which were more representative of the full scale antenna.

Configuration 29 patterns represent the final antenna configuration for the F-4. Antenna patterns were measured at 9 frequencies. The principal planes plus 7 conic patterns were measured for $E\theta$ and $E\phi$ polarization. This data is included in Appendix B. Configuration 29 data shows that the antenna can provide coverage from 30 MHz to 400 MHz. Some nulls do exist in these patterns, but these would also be present if conventional narrow band blades were used. The multiband antenna, Configuration 29, provides coverage that is at least as good as that provided by standard blade antennas.

2.3.2 F-18 Antenna Pattern Testing

Antenna patterns were measured on a 1/4 scale F-18 with the antenna located on the right vertical stabilizer. This data is given as Configuration 30 and is included as Appendix C. The antenna used is identical to Configuration 29 used on the F-4. In order for the antenna to fit into the space available on the F-18, the antenna was turned 180 degrees and a 11 degree wedge was added at the rear. A sketch of this installation is shown in Figure 26. A review of the data shows that the second tail has an influence on the antenna patterns across the frequency band. However, the change is not consistent for all θ angles. While it may cause an additive effect at some elevation angles resulting in a large energy lobe, it subtracts at other elevation angles at the same azimuth angle causing a dip in the

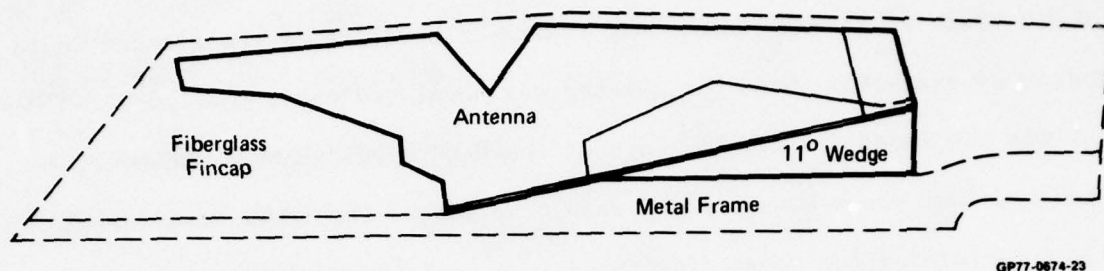


Figure 26 F-18 Fin Cap with Multiband Antenna

pattern or generates a large lobe 180 degrees away in azimuth. Most of the differences are seen at θ angles near or below the horizon. A typical example can be seen when comparing patterns at 42 MHz, E θ polarization, with θ angles of 120 degrees and 150 degrees. Nulls of -15 dB are observed in these patterns. An additional effect noticed on the F-18 installation is that the forward coverage at higher frequencies is more solid than the aft coverage, while on the F-4 the reverse condition exists. A conclusion reached from this is that the resistive termination of the antenna tends to make the antenna slightly directive. A general conclusion drawn from the F-18 patterns is that although asymmetry exists in the radiation patterns the antenna appears to be useable for this installation if some degradation can be accepted. As an alternate, a second antenna could be installed in the left tail which would then provide excellent spatial coverage, but introduce switching complications. A small ventral fin containing the multiband antenna may also be an attractive alternative.

2.4 Power Measurements

In the MCAIR proposal for the Multiband Antenna, Report Number MDC A4408, Section 2.2.1, Task 1, it was stated that the power handling of the antenna would be determined by analysis. Once the antenna was developed and a configuration was found that met the impedance requirements of the NADC specification, however, it became apparent that power measurements should be made. The power measurements were desirable to determine the power dissipated in a resistor used to terminate the capacitive coupled extension of the antenna. High power tests were therefore conducted instead of analysis.

Configuration 21 was the first configuration subjected to high power testing. In this configuration a 2 watt, 570 ohm, carbon resistor was used to terminate the antenna extension. The antenna was connected to a 10 watt power source which was capable of operating from 30 MHz to 225 MHz. Maximum available CW output power was applied to the antenna for a period of 15 minutes. The resistor showed no evidence of failure although it did feel hot to the touch.

In Configuration 22 the resistor was replaced with a piece of SC-377 space cloth. This material has a dc resistance of 377 ohms per square. However, because of the shape of the piece used in this installation the dc resistance of the space cloth was 80 ohms. The space cloth was attached to the end of the 20 inch antenna extension and was terminated to the antenna support structure. CW measurements were made across the frequency band using a 10 watt power source. A vacuum tube volt meter (VTVM) was used to monitor the voltage drop across the termination. The data is given in Table 1. During these measurements some heating of the space cloth was noticed, but the temperature did not appear to be excessive.

**Table 1 Power Measurements
Configuration 22**

Frequency (MHz)	Input Power (Watts)	Voltage Across Termination*
30	7.0	17
42	7.0	14
50	10.0	17
75	10.0	17
115	6.5	10
150	10.0	4
175	8.5	7
225	7.0	15

* Voltage Measured With VTVM

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Power testing was conducted on Configuration 24 in which the capacitively coupled extension was shortened to 9 inches. The space cloth configuration was therefore considerably longer since it was attached at a higher point on the antenna. The space cloth was changed to SC 100, but due to its shape had a dc resistance value of 300 ohms. Since power dissipation in the space cloth was of concern, additional instrumentation was used for this test. Thermocouples were attached to the space cloth at two places which had been determined to be hot spots. The thermocouples had no effect on the impedance of the antenna. The results of these tests are given in Table 2A and B.

Configuration 26 was given a power test and the results are shown in Table 3. Because of the shape of the capacitive extension a different space cloth arrangement was required. The space cloth was considerably smaller than was used for previous configurations. The thermocouple readings indicated high temperatures at the Band 1 frequencies. This made the configuration undesirable and it was rejected.

Based on the results of Configuration 24 two additional space cloth configurations were tried in an attempt to distribute the heat in the cloth more evenly. This data is recorded as Configuration 28 and is shown in Table 4. Here again, thermocouples were attached at the hottest spots on the cloth. It can be seen that when the space cloth is moved away from the surface of the antenna, with the spacing gradually increasing, the temperature rise on the cloth is relatively even and is a

minimum. However, for this particular configuration the possibility existed that the space cloth could be squeezed against the antenna when the antenna was foamed into the fincap. Therefore a low dielectric foam wedge made of Eccofoam PS was placed between the antenna and termination. The test was repeated and data recorded as Configuration 28B. A slight temperature increase was noticed which was within the specification limits of the space cloth. Configuration 28B was the most suitable arrangement found and became part of the final configuration.

**Table 2 Power Measurements
Configuration 24**

Table 2A - Thermocouple Located at Center of Space Cloth

Frequency (MHz)	Input Power (Watts)	Temperature at Termination (F°)	
		Start Temp	End Temp
30	10	Ambient Temp = 77	85
42	10		94
88	10		85
108	10		84
140	10		77
176	10		78
220	10		80
42	14		105

GP77-0674-26

Table 2B - Thermocouple Located ½ Inch from Bottom of Space Cloth

Frequency (MHz)	Input Power (Watts)	Temperature at Termination (F°)	
		Start Temp	End Temp
30	10	Ambient Temp = 85	140
42	10		203
88	10		153
108	10		185
140	10		114
176	10		87
220	10		135
42	14		235

GP77-0674-27

Table 3 Power Measurements
Configuration 26

Frequency (MHz)	Input Power (Watts)	Temperature at Termination (F°)	
		Start Temp	End Temp
30	10	Ambient	158
42	10	Temp = 82	215
88	10		195
108	10		170
140	10		130
174	10		107
220	10		145

GP77-0674-28

Table 4 Power Measurements
Configuration 28

Table 4A - Termination Pulled Away From Antenna, Configuration 28A

Frequency (MHz)	Input Power (Watts)	Temperature at Termination (F°)	
		Start Temp	End Temp
30	9.5	Ambient	110
42	11.0	Temp = 60°	99
88	10.5		125
108	10.0		108
140	14.0		75
174	14.0		61
220	11.5		82

GP77-0674-29

Table 4B - Triangular Dielectric Wedge Between Antenna and Termination, Configuration 28B

Frequency (MHz)	Input Power (Watts)	Temperature at Termination (F°)	
		Start Temp	End Temp
30	11.0	Ambient	91
42	12.5	Temp = 65	100
88	12.0		147
108	13.0		125
140	16.0		113
174	16.0		83
220	13.0		85

GP77-0674-30

A power test was run on Configuration 29 which is the final antenna design. This configuration is similar to Configuration 28B, the major difference being a change from the fiberglass printed circuit board to a Teflon printed circuit board. Other changes were described in Section 3.1 of this report. In addition to previously described changes, a low dielectric wedge made of high temperature Eccofoam SH was placed between the antenna and the space cloth. The power measurements for Configuration 29 were taken inside of a fincap thereby stabilizing the ambient air surrounding the antenna. Table 5 shows the measured data for this configuration. The data shows that the temperature rise for this configuration was the smallest of all configurations tested while the input power was increased to as high as 17 watts at some of the test frequencies.

**Table 5 Power Measurements
Configuration 29**

Frequency (MHz)	Input Power (Watts)	Temperature at Termination (F°)	
		Start Temp	End Temp
30	15.0	Ambient Temp = 110°	136
42	13.0		145
88	13.0		160
108	13.0		144
140	17.0		123
174	17.0		120
220	12.5		133
30	15.0		133

GP77-0674-31

2.5 Gain Comparison Measurements

Gain comparison measurements were made on significantly changed configurations beginning with Configuration 22. Since it was difficult to obtain data for gain comparisons, particularly at the lower frequencies, a number of different methods were used for the gain comparison.

Initially, standard dipoles tuned to the test frequency were used in a substitution method. The dipoles were located on the roof of the antenna tower.

The fincap and the dipole sequentially transmitted to a receiving station located 1000 feet away. The receive station could be moved about the antenna tower. This was done for Configuration 22, with data being taken at two locations. Data measured over the frequency band (Table 6) showed lower than expected gain in Bands 2 and 3. Therefore, additional data was taken at a fixed frequency in Band 3 (325 MHz) using a Transco UHF blade mounted on a 30 inch ground plane as a standard. This antenna was also located on the roof of the antenna tower. Various changes were made to the aircraft model in the vicinity of the antenna and the effects were recorded (Table 7). The conclusion reached from analyzing the data was that the tail light

Table 6 Gain Comparison Measurements
Configuration 22

Frequency (MHz)	Reference Level (dB) (Dipole)	Fincap Antenna (dB) At $\phi = 173^{\circ}$	Fincap Antenna (dB) At $\phi = 80^{\circ}$
30	0	-15	-23
40	0	-13	-11
76	0	-11	-15
115	0	-4	-10
140	0	-7	-4
175	0	+9	-4
225	0	-8	-6
325	0	-7	-11
400	0	0	-18

Portable Receiver at Ground Level
Range = 1000 Feet at $\phi = 173^{\circ}$
= 500 Feet at $\phi = 80^{\circ}$

GP77-0674-32

wiring was affecting performance and had to be relocated. All subsequent data was taken with the tail light wiring located away from the antenna routed along the Pride waveguide.

Configuration 24 was checked in Bands 2 and 3 using standard blade antennas for the gain reference. The blade antennas were mounted on a 30 inch horizontal ground plane. Data on this configuration (Table 8) shows that the antenna was comparable to standard blade antennas.

**Table 7 Fixed Frequency Gain Comparison Test
Configuration 22**

Test Sequence	Test Description	Relative Power Level at Fincap (dB)
1	MCAIR Antenna with Tail Light Wire and Waveguide	-18
2	MCAIR Antenna without Tail Light Wire and Waveguide	-7
3	Transco Antenna on Tail Structure	-6
4	Transco Antenna with Tail Light Wire and Waveguide	-3
5	NADC Antenna without Tail Light Wire and Waveguide	-6
6	NADC Antenna with Tail Light Wire and Waveguide	-9
7	Same as 6 - Wire Assembly Shifted ½ Inch Toward Antenna	-9
8	Repeat of 7 after Considerable Time Delay	-8
9	NADC Antenna with Wire and Waveguide Covered with Foil	-8
10	MCAIR Antenna with Wire and Waveguide Covered with Foil	-12
11	MCAIR Antenna with Wire and Waveguide - Foil Removed	-14
12	MCAIR Antenna with Tail Light Wire Relocated	-10

Receiver at 1000 Feet

$\phi = 170^\circ$

Frequency 325 MHz

Transco UHF Blade used as Reference on 30 Inch Ground Plane

GP77-0674-33

**Table 8 Gain Comparison Measurements
Configuration 24**

Frequency (MHz)	Reference Standard Antenna (dB) *	Fincap Antenna (dB)
110	Collins Blade } 0	+3
135	Used As } 0	+3
175	Standard } 0	+17
225	Transco Blade } 0	-3
325	Used As } 0	+4
400	Standard } 0	-3

Portable Receiver at Ground Level

Range = 1000 Feet

$\phi = 173^\circ$

*Standards Mounted on 30 Inch Ground Plane

GP77-0674-34

In Configuration 26 gain measurements were made using the fincap antenna, conventional blades for Bands 2 and 3, and dipoles tuned to the test frequency for all bands. The conventional blades were mounted on a 30 inch ground plane for the first set of data. The conventional blades were then mounted on the turtleback of the aircraft and the Bands 2 and 3 measurements were repeated. Measurement on the back of the aircraft were made with the receiver at two locations $\phi = 173$ degrees

and $\phi = 135$ degrees (Tables 9A and B). Differences between these two data sets led us to locate the receiving station in a Pitman 50 foot aerial fiberglass bucket used at a range of 100 feet. This was done to eliminate ground range effects.

With this configuration, additional data was taken at four points around the aircraft model. This data (Table 9C) agrees with data points on antenna patterns when comparing pattern of an antenna located on the fincap to patterns of an antenna located on the turtleback of the F-4. Such a comparison at similar frequencies is shown in Figure 27. The turtleback pattern data was taken for an antenna located at Fuselage Station 380 and Right Butt Line 13.50 which is a location similar to that used for this test. These two patterns do not have the same scale factors, but it can be seen that the tail mounted antenna suffers more gain loss at broadside than the turtleback antenna. Comparing the equivalent pattern of this study to the turtleback antenna of Figure 25, therefore, shows good agreement between antenna gains at various azimuth angles.

Gain comparison measurements were made on Configuration 28, using the Pitman 50 foot aerial fiberglass bucket at a range of 100 feet for the receiving site. Configuration 28 was similar to Configuration 24 except that a dielectric block was added between the antenna and the space cloth. The antennas were compared to tuned dipoles across the frequency band, and to blade antennas in Bands 2 and 3. Because of large variations in the low band measurements (Table 10) the receiver was taken to ground level at 1000 feet range and additional data was taken. As part of this test the standard dipole was located in several positions which caused the value of the references level to vary by more than 15 dB. This made the data taken at the lower frequencies questionable.

For Configuration 29, which represents the final configuration, a set of monopoles were constructed, tuned to the lower test frequencies. They were mounted on the back of the aircraft, one at a time, as can be seen in Figure 11. This was

Table 9 Gain Comparison Measurements
Configuration 26

Table 9A

Frequency (MHz)	Reference Level (dB)	Blade Antenna* (dB)	Fincap Antenna (dB)
30	0	—	-14
40	0	—	-14
76	0	—	-14
110	0	-11	-4
135	0	-2	-1
150	0	+3	+2
175	0	-13	+6
225	0	+4	+3
325	0	0	-14
400	0	0	-1
315	0	—	-3
350	0	—	+5

Portable Receiver at Ground Level

Dipole used as Reference

GP77-0674-35

Range = 1000 Feet, $\phi = 173^\circ$

*Blades Mounted on 30 Inch Ground Plane

Table 9B

Frequency (MHz)	Reference Level (dB)	Fincap Antenna (dB)	
		$\phi = 173^\circ$	$\phi = 135^\circ$
110	0	-2	-1
140	0	-1	+18
150	0	+2	-1
175	0	+25	+15
225	0	0	-7
315	0	-3	-4
325	0	-10	-10
335	0	+2	-6
400	0	-1	+5

Portable Receiver at Ground Level

Blades mounted on Turtle Back
Used as Reference

GP77-0674-36

Range = 1000 Feet

Table 9C

Frequency (MHz)	Reference Antenna (Standard Blades)*	$\theta = 92.5^\circ$ $\phi = 173^\circ$	$\theta = 92.5^\circ$ $\phi = 135^\circ$	$\theta = 92.5^\circ$ $\phi = 90^\circ$	$\theta = 92.5^\circ$ $\phi = 270^\circ$
110	0	-1	-3	+1	-8
140	0	+3	-6	-12	-25
150	0	+3	-5	-6	-13
175	0	+18	+26	+14	+14
225	0	+1	0	-3	-2
315	0	-2	-3	-16	-13
325	0	0	-4	-7	-13
335	0	+1	+2	-12	-8
400	0	+8	0	-17	-10

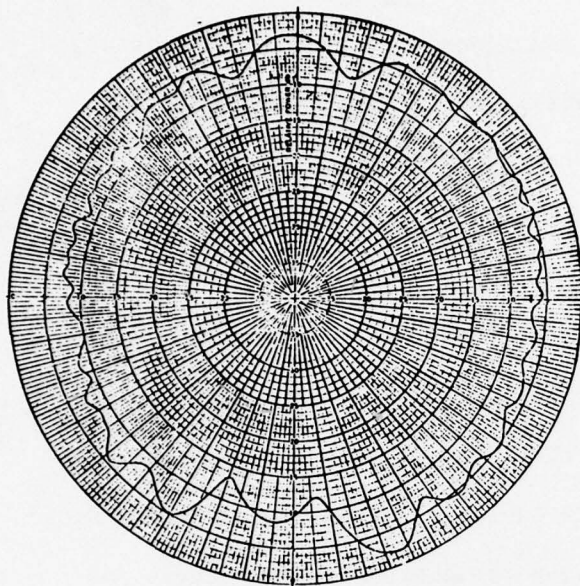
Portable Receiver in Pittman Bucket

GP77-0674-37

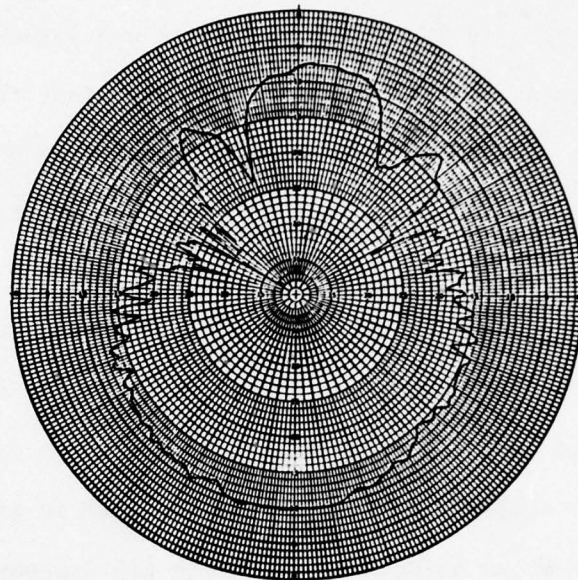
Range = 100 Feet

Height = 50 Feet (Same as Model Antenna)

Blades Mounted on Turtleback of Aircraft



Standard UHF Communication Antenna on
F-4 Turtle Back



GP77-0674-24

Multiband Antenna on F-4 Vertical Stabilizer

Figure 27 Antenna Pattern Comparison

**Table 10 Gain Comparison Measurements
Configuration 28**

Frequency (MHz)	Reference Dipole	$\phi = 90^\circ$		$\phi = 135^\circ$		$\phi = 180^\circ$	
		Blade	Fincap	Blade	Fincap	Blade	Fincap
30	0	-	-27	-	-14	-	-20
42	0	-	-15	-	-14	-	-15
88	0	-	-19	-	-14	-	-10
110	0	0	-9	-7	-6	-2	-1
135	0	+4	-3	-4	-7	-4	+3
150	0	-1	-19	-4	-9	-9	-1
175	0	-18	-3	-26	-4	-26	-5
225	0	-6	-9	0	+2	-8	-5
325	0	0	-5	-24	-16	-12	-11
400	0	0	-10	-4	-3	-14	-2

Portable Receiver in Pittman Bucket

Range = 100 Feet

Height = 50 Feet

Dipole Used as Reference

Blades Mounted on Turtleback

GP77-0674-38

done to minimize the effects of surrounding structures. Data for this configuration is given in Table 11. This data was taken with the fincap placed over the prototype antenna. All of the data indicates that the signal level at the antenna is better than -20 dBi in Band 1. Band 2 and Band 3 data indicates that the antenna is equivalent to or better than individual standard blades if mounted in the same location.

To resolve the uncertainties of the data at the lower frequencies, an additional Band 1 test was done. This consisted of determining the antenna gain based on the range equation with all parameters known except the transmit antenna gain. This was done at four frequencies and the data is given in Table 12. These measurements were made at an azimuth angle of $\phi = 135$ degrees. Using the obtained power levels and spotting them on the appropriate antenna pattern $\theta = 90$ degrees at $\theta = 135$ degrees establishes a power level for the pattern. Based on this level, the average antenna gain in the horizontal plane with readings taken every 10 degrees is -19.42 dBi

**Table 11 Gain Comparison Measurements
Configuration 29**

Frequency (MHz)	Monopole or Blade (dB)	Fincap (dB)		
		$\phi = 90^\circ$	$\phi = 135^\circ$	$\phi = 180^\circ$
30	0	-8	-17	-20
42	0	-18	-16	-13
88	0	-15	-7	+5
110	0	-2	-1	+3
135	0	-10	0	+6
150	0	-11	+1	+8
175	0	+17	+20	+25
225	0	-5	+4	+3
325	0	-7	-6	+7
400	0	-8	+3	+13

Portable Receiver in Pittman Bucket

GP77-0674-39

Range = 100 Feet

Height = 50 Feet

Monopoles and Blades Mounted on Turtleback

Table 12 Antenna Gain Determination
Configuration 29A

(All Values in dB)	30 MHz	42 MHz	76 MHz	88 MHz
Power Received (P_R)	-18	-23	-15	-13
Transmitter Power (P_T)	37	37	34.8	34.8
Receive Antenna Gain (G_R)	2.14	2.14	2.14	2.14
Space Loss (L_S)	33.67	36.6	41.79	43.02
Transmission Cable Loss (L_{TC})	1.1	1.0	1.0	1.0
Receive Cable Loss (L_{RC})	0.3	0.3	0.4	0.4
Receive Antenna Mismatch Loss (L_{MR})	1.9	3.1	0.8	0.4
Transmit Antenna Gain (G_T)	-20.17	-21.14	-7.95	-5.12

$$G_T = P_R - P_T - G_R + L_S + L_{TC} + L_{RC} + L_{MR}$$

GP77-0674-40

for 30 MHz and -19.8 dBi for 42 MHz. The maximum/minimum gains for 30 MHz are -16.95 dBi/-20.95 dBi and for 42 MHz -17.4 dBi/-22.7 dBi.

The general conclusion reached from the various gain comparison measurements is that the antenna will function very well as Bands 2 and 3 and can meet the specification requirement for Band 1.

2.6 Mechanical Design and Construction

A mechanical and structural design analysis was performed on the final configuration, Configuration 29. The various materials used in the antenna and the processes used for assembly were investigated and substitutions made to arrive at a flightworthy antenna. Layout drawings of the antenna were made showing all of the detail parts.

2.6.1 F-4 Installation

An installation drawing was prepared to show the antenna installation on the vertical fin of the F-4. This drawing gives the details for modifying an existing fincap to incorporate the multiband antenna, including the removal of existing foam from the fincap and the process for installing and securing the antenna into the fincap using foam. The drawings were used for final assembly of the multiband, fincap antenna.

The fincap to be modified was provided by NADC. During the fabrication process a problem was encountered which had not been anticipated. In order to install the antenna into the fincap a rib at the base of the fincap had to be removed. This rib is attached to the fincap with 100 rivets. Once these were removed it was found that additional hardware attached to the rib, such as alignment pins, were embedded in the foam and held the rib in place. These pins made it impossible to remove the rib in a useable condition. A second rib was therefore needed which was carefully removed from another fincap. This was done by sawing off the fiberglass fincap above the height of the rib. The rib was then placed in the original fincap and it was found that all of the attaching screw holes were in alignment, but only 30 percent of the rivet holes would align. Consequently this second rib was unuseable. A blank rib was required which was ordered from the manufacturer by NADC and was provided to MCAIR.

The foaming process was planned so that the final antenna/fincap assembly would be as strong as previous fincaps without the antenna. All existing foam and ribs in the area of the antenna were removed from the fincap and the antenna was coated with an EPON 828 epoxy to ensure a good bond of the foam to the antenna. With the fincap located in a restraining fixture, the foam was injected with two nozzles, one located on each side of the antenna. This provided equal amounts of foam to each side of the antenna, thus preventing the antenna from shifting within the fincap. The foam was cured at high temperature to provide maximum assembly strength.

During this operation, a problem was encountered (as determined from electrical tests) due to the pressure exerted by the foam on the antenna loading coil. The coil was forced against the antenna feed point thereby shorting out the antenna and preventing electrical operation. This failure was corrected by boring a small hole near the coil, removing the foam locally and providing a Teflon insulator

between the coil and the antenna feed. The local area was then refoamed, and a fiberglass cover was riveted over the hole in the fincap. Electrical tests showed the antenna to be operating satisfactorily as reported in Section 2.2.6 of this report.

The weight of the fincap with the multiband antenna is 14.5 pounds.

2.6.2 F-18 Installation

A second installation drawing was prepared to show how the antenna can be located in a vertical fin of the F-18. To make the antenna fit into the available space, it was necessary to rotate it by 180 degrees and tilt its forward end down by 11 degrees. From electrical testing it was determined that an 11 degree metallic wedge was needed between the antenna base and top side of the vertical stabilizer to give continuity. The F-18 installation also required an offset from the centerline of the fin for the rear portion of the antenna and a reduction in the width of the antenna mounting flange to allow it to fit within the existing dimensions of the fincap. These changes are insignificant and do not affect electrical performance. The antenna is sandwiched between honeycomb sections which are made to accept the antenna contour.

3.0 CONCLUSIONS

The results of this development program have shown that it is possible to build an antenna that is capable of operating from 30 MHz to 400 MHz with an impedance match of less than 3 to 1 from 42 MHz to 400 MHz and less than 5 to 1 from 30 MHz to 42 MHz. The antenna can be made small enough to make it suitable for use on most Navy aircraft including the F-4, F-18, AV-8, F-14, A-6, and A-7. The antenna can be used with either end being forward in a fincap or a ventral fin without affecting its performance. Antenna pattern data showed that the antenna has performance which is equal to or better than the performance obtained from conventional narrow band blades in the 100 MHz to 400 MHz region. Coverage in the 30 MHz to 100 MHz band is omnidirectional with the signal strength near the horizon being between -16 dBi and -20 dBi. The antenna is capable of operating at power levels higher than 15 watts cw for extended periods of time.

The antenna is suitable for retrofit into the F-4 vertical stabilizer fincap. The retrofit requires considerable rework of the fincap including removal of all foam and replacement of the metal structural rib.

The antenna is suitable for use on the F-18 aircraft. The antenna is installed by reversing the antenna and tilting it 11 degrees forward to make it compatible with the mold line of either vertical stabilizer.

4.0 RECOMMENDATIONS FOR FUTURE INVESTIGATIONS

The results of this contract have established the capability of constructing an antenna that will operate from 30 MHz to 400 MHz. However, there are several aspects of the antenna/fincap or antenna/ventral assembly that warrant further investigations. These are:

- o Add the necessary matching to the antenna to make it independent of Pride or other devices.
- o Perform trade studies to determine cost of retrofit versus replacement of fincap/ventral fin for each particular installation.
- o Investigate all materials used in antenna to arrive at an optimum material selection.
- o Investigate the possibility of providing L-Band performance within the envelope of the Multiband antenna.

APPENDIX A
CONFIGURATION LOG

TEST CONFIGURATION LOG

SHEET 1 OF 12

PROGRAM F4B/J FINCAP ANTENNA

TR WR 703-174

DATE	NUMBER	CONFIGURATION DESCRIPTION	PATTERNS MADE
1/26/77	1	Navy Antenna w/o Fincap or Pride Wiring	Z 30-400 MC.
1/26/77	2	MAC Prototype w/o Fincap or Pride Wiring	Z 30-400 MC.
1/27/77	3	MAC Prototype with Fincap but no Pride Wiring	Z 30-400 MC.
2/1	4	MAC Prototype with tail light wiring and Pride Waveguide/ Horn mocked up. 1/5 scale antenna is NADC supplied.	Z 30-400 MC. 1/5 scale; 76, 145, 325, MC.
2/1	5	MAC Proto. same as Conf. 4 except added group strap under aft edge of Ant. along lite wire tubing	Z 30-400 MC.
2/1	6	MAC Proto. same as Conf. 5 except w/o Pride or Lite wiring	Z 30-400 MC.
2/1	7	MAC Proto. same as Conf. 4 except removed Tuning capacitor block from antenna.	Z 30-400 MC.

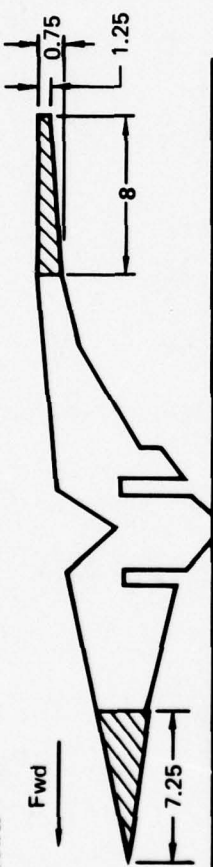


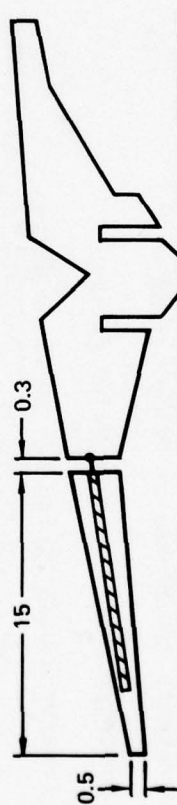
TEST CONFIGURATION LOG

SHEET 2 OF 12

PROGRAM F4B/J FINCAP ANTENNA

TR:WR 703-174

DATE	NUMBER	CONFIGURATION DESCRIPTION	PATTERNS MADE
2/1/77	8	<p>Same as Conf. 4 with antenna extended on Fwd & Aft end as shown</p> 	Z 30-400 MC
2/1/77	9	Same as Conf. 8 without Loading Coil	Z 30-400 MC
2/1/77	10	Same as Conf. 8 with 5 1/2 turn Loading Coil instead of 3 1/2 turns.	Z 30-400 MC
2/1/77	11	Same as Conf. 8 with 7 1/2 turn Loading Coil	Z 30-400 MC
2/2/77	12	Same as Conf. 4 except added Fwd. element with 141 MC choke as shown (14.45" long).	Z 30-400 MC



Note: All dimensions in inches


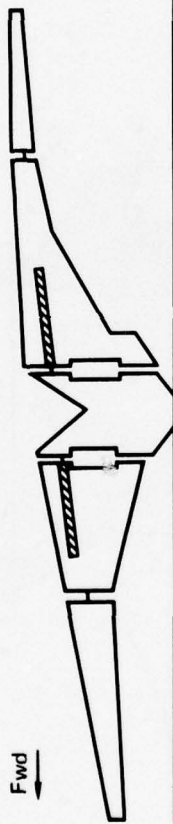
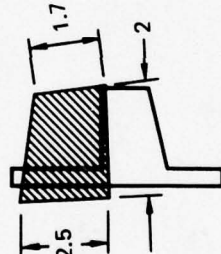
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TEST CONFIGURATION LOG

SHEET 3 OF 12

PROGRAM F4B/J FINCAP ANTENNA

TR WR 703-174

DATE	NUMBER	CONFIGURATION DESCRIPTION	PATTERNS MADE
2/2/77	13	<p>Same as Conf. 12 except added 8-1/2" aft element with 141 MC choke as shown (14.45" long)</p> 	Z 30-400 MC
2/2/77	14	<p>Same as Conf. 13 except added chokes at the 2 Big Slots, cut for 310 MC (6.58" long)</p>  <p>All Caps 0.3" wide</p> <p>Note: All dimensions in inches</p>	Z 30-400 MC
2/2/77	15	<p>Same as Conf. 14 except added to Aft Capacitive piece ~ as shown and tuning cap. block is all the way in.</p> 	Z 30-400 MC

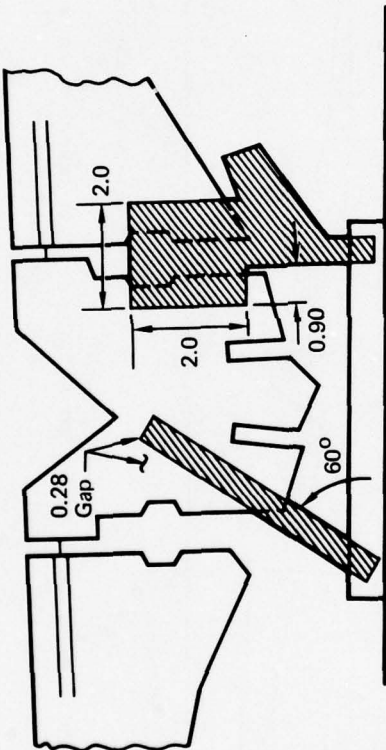
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TEST CONFIGURATION LOG

SHEET 4 OF 12

PROGRAM F4B/J FINCAP ANTENNA

TR WR 703/174

DATE	NUMBER	CONFIGURATION DESCRIPTION	PATTERNS MADE
2/4/77	16	<p>Same as Conf. 14 except modified the 2 capacitive stubs as shown and with Cap. Block all way out.</p>  <p>Note: All dimensions in inches</p>	Z 30-400 MC
2/7/77	17	<p>Same as Conf. 16 except 60° strap is spaced with Teflon strip and now 3.68" long. All chokes are shorted out except 1st one aft of feed point. Coil now 1 1/2 turns long.</p>	Z 30-400 MC

GP77-0874-44

SHEET 5 OF 12

PROGRAM _____ F4B/J FINCAP ANTENNA

TR/WR 703-174

DATE	NUMBER	CONFIGURATION DESCRIPTION	PATTERNS MADE
2/25/77	18	<p>Both Vert. Gnd. Straps are modified per 16 & 17 ant. extended with Cap. straps as shown, one choke and 2 coils.</p>	Z = 30-400 MC

Note: All dimensions in inches

Note: All dimensions in inches

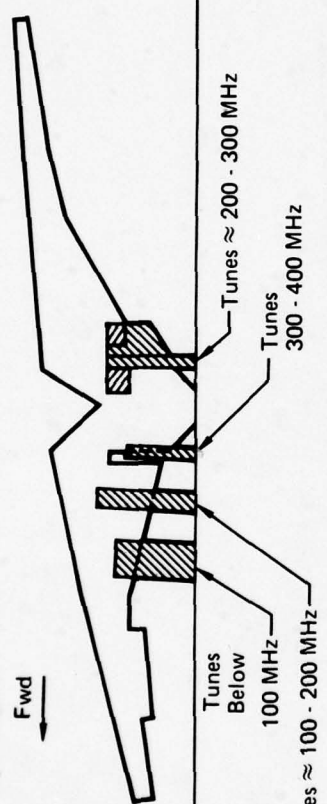
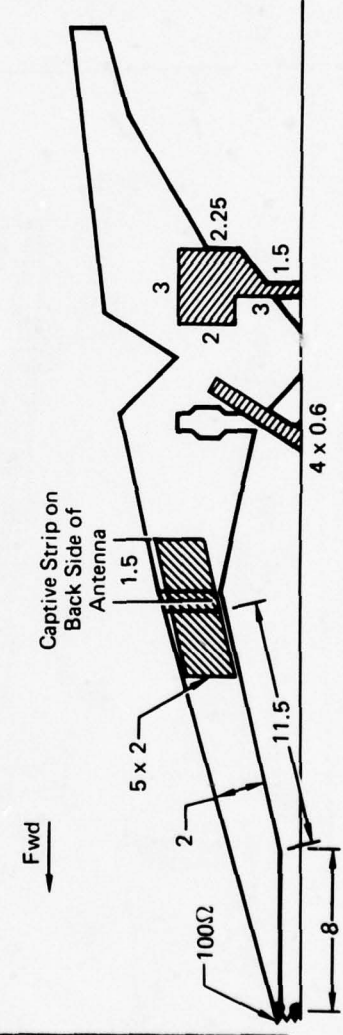
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TEST CONFIGURATION LOG

SHEET 6 OF 12

PROGRAM F4B/J FINCAP ANTENNA

TR WR 703-174

DATE	NUMBER	CONFIGURATION DESCRIPTION	PATTERNS MADE
2/25/77	19	<p>Same as Conf. 18 except without coils, 60° strip is now Vertical & Wider $\approx 0.6"$ X $4.0"$, and 200-300 strip is filled in on top right side.</p> 	Z = 30-400 MC
2/28/77	20	<p>MAC Proto. with 6 1/2 turn coil at Feed Point. Modified Aft Tuning Stub & Fwd stub.</p> 	Z = 30-400 MC

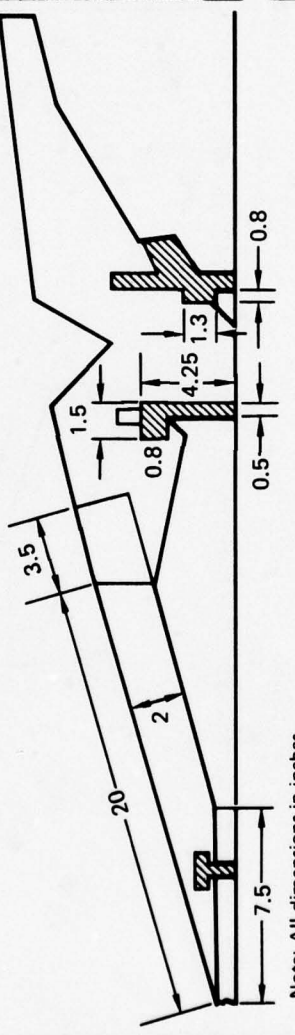
GP77-0674-46

TEST CONFIGURATION LOG

SHEET 7 OF 12

PROGRAM F4B/J FINCAP ANTENNA

TR WR 703-174

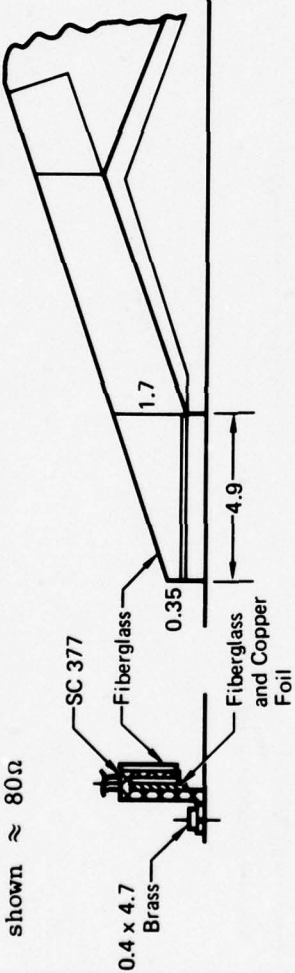
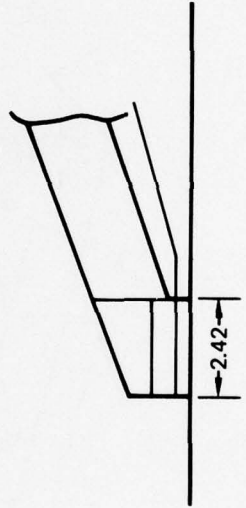
DATE	NUMBER	CONFIGURATION DESCRIPTION	PATTERNS MADE
3/8/77	21	<p>MAC Proto. w/6 1/2 turn coil at Feed. Modified Fwd. and Aft Tuning stub, 570 Ω + Tuning Cap at APEX and 3 1/2 ins. of overlap from Old unto extention.</p>  <p>Note: All dimensions in inches</p>	<p>Z = 30-400 PWR Loss in R</p>

TEST CONFIGURATION LOG

SHEET 8 OF 12

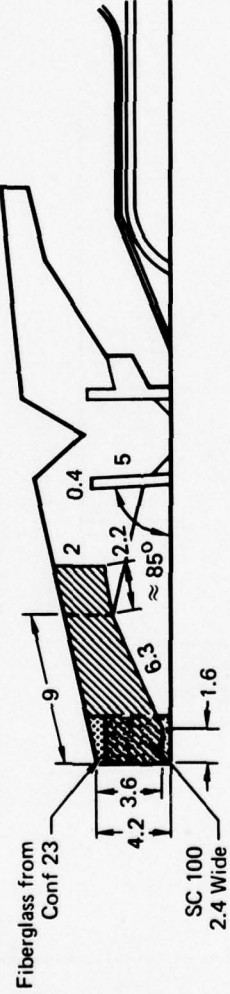
PROGRAM F4B/J FINCAP ANTENNA

TR WR 703-174

DATE	NUMBER	CONFIGURATION DESCRIPTION	PATTERNS MADE
3/8/77	22	<p>Same as Conf. 21 except removed new TAB on Aft Tuning Stub, and FWD Resistor & Cap. Stud replaced with SC-377 cloth as shown $\approx 80\Omega$</p> 	<p>Z= 30-400, PWR loss in SC 377 & Field Strength Tests</p>
3/10/77	23	<p>Same as Conf. 22 except SC-77 space cloth is now 2.42 in long $\approx 185\Omega$</p> 	<p>Z = 30-400</p>

Note: All dimensions in inches

GP77-0074-48

TEST CONFIGURATION LOG			
PROGRAM F4B/J FINCAP ANTENNA		TR WR 703-174	SHEET 9 OF 12
DATE	NUMBER	CONFIGURATION DESCRIPTION	PATTERNS MADE
3/15/77	24	<p>MAC Proto. w/6 1/2 turn coil at Feed Point, Modified Fwd tuning stub as shown, add cap. extension on FWD END with SC-100 termination similar to Conf. 22. Light wiring was lowered c/o waveguide as shown (SC-100 \approx 300 Ω)</p>  <p>Note: All dimensions in inches</p>	<p>Z = 30-400 MC EFF 110-400 MC 1/5 scale patterns</p>
3/15/77	25	<p>Same as Conf. 4 except w/o tailight wiring</p>	<p>1/5 scale @ 325 MC</p>

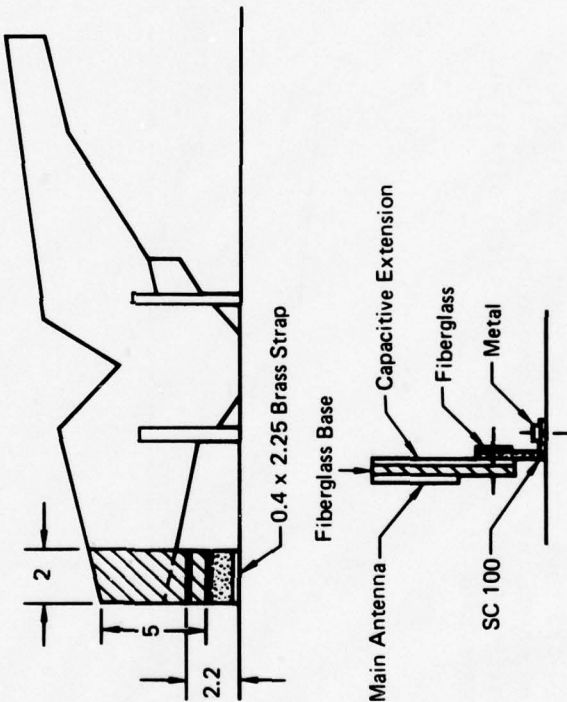
6172-9974-18

TEST CONFIGURATION LOG

SHEET 10 OF 12

PROGRAM F4B/J FINCAP ANTENNA

TR WR 703-174

DATE	NUMBER	CONFIGURATION DESCRIPTION	PATTERNS/ADE
3/16/77	26	<p>Same as Conf. 24, i.e. new Tailight wiring & same FWD Cap. stub. and 6 1/2 turn coil. Now Cap. extension on FWD end as shown with SC-100 Showing a D.C. Res. = 140 Ω.</p>  <p>Note: All dimensions in inches</p>	Z = 30-400 MC 1/5 scale patterns

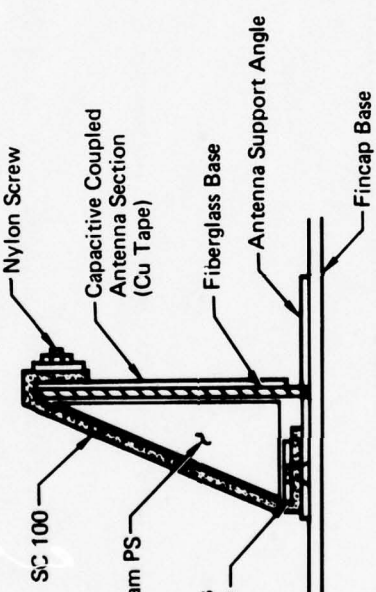
GP77-0674-50

TEST CONFIGURATION LOG

SHEET 11 OF 12

PROGRAM F4B/J FINCAP ANTENNA

TR WR 703-174

DATE	NUMBER	CONFIGURATION DESCRIPTION	PATTERNS MADE
3/23/77	27	Same as Conf. 25 except element only, w/o only dielectric (fiber glass)	1/5 scale patterns
3/3/77	28	Same as Conf. 24 except space cloth is as shown below in view Lkg. aft with Eccofoam PS, (K=1.2) spacer between space cloth and fiber glass.	Z = 30-400 efficiency 30-400
4/12/77	29	<p>Same as Conf. 28 except using P.C. board ant. with diel. const K=2.23 & 1/2" AL pieces extended Fwd to tip of antenna. Last 2 1/2" of AL's vertical piece is cut off. Original NADC Antenna element is lengthened 2.70" X 2" high. x 2.16". used Eccofoam SH under SC-100. Also top of SC-100 clamped with AL strip.</p>  <p>Note: All dimensions in inches</p>	Z 30-400 1/5 scale patterns

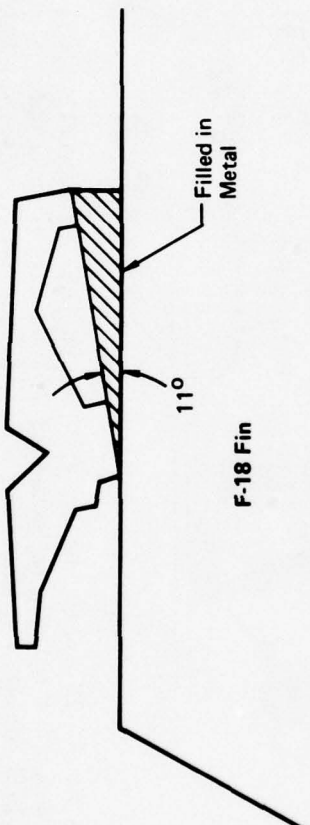
GP77-0674 51

TEST CONFIGURATION LOG

SHEET 12 OF 12

PROGRAM F4B/J FINCAP ANTENNA

TR WR 703-174

DATE	NUMBER	CONFIGURATION DESCRIPTION	PATTERNS MADE
4/12/77	29A	Conf. 29 w/finicap over the antenna	Z=30-400 MC
4/26/77	30	Conf. 29 antenna on the F-18 1/4 scale model, mounted backwards on the R.H. finicap tilted as shown	
			Z = 30-400
	31	Final installation in flight finicap as delivered to the Navy.	
	31A	Same as Conf. 31 with Pride simulated on outside of finicap	

377-0674-52

APPENDIX B

F-4 ANTENNA PATTERNS

DOCUMENT
REVISION

ANTENNA: NADC

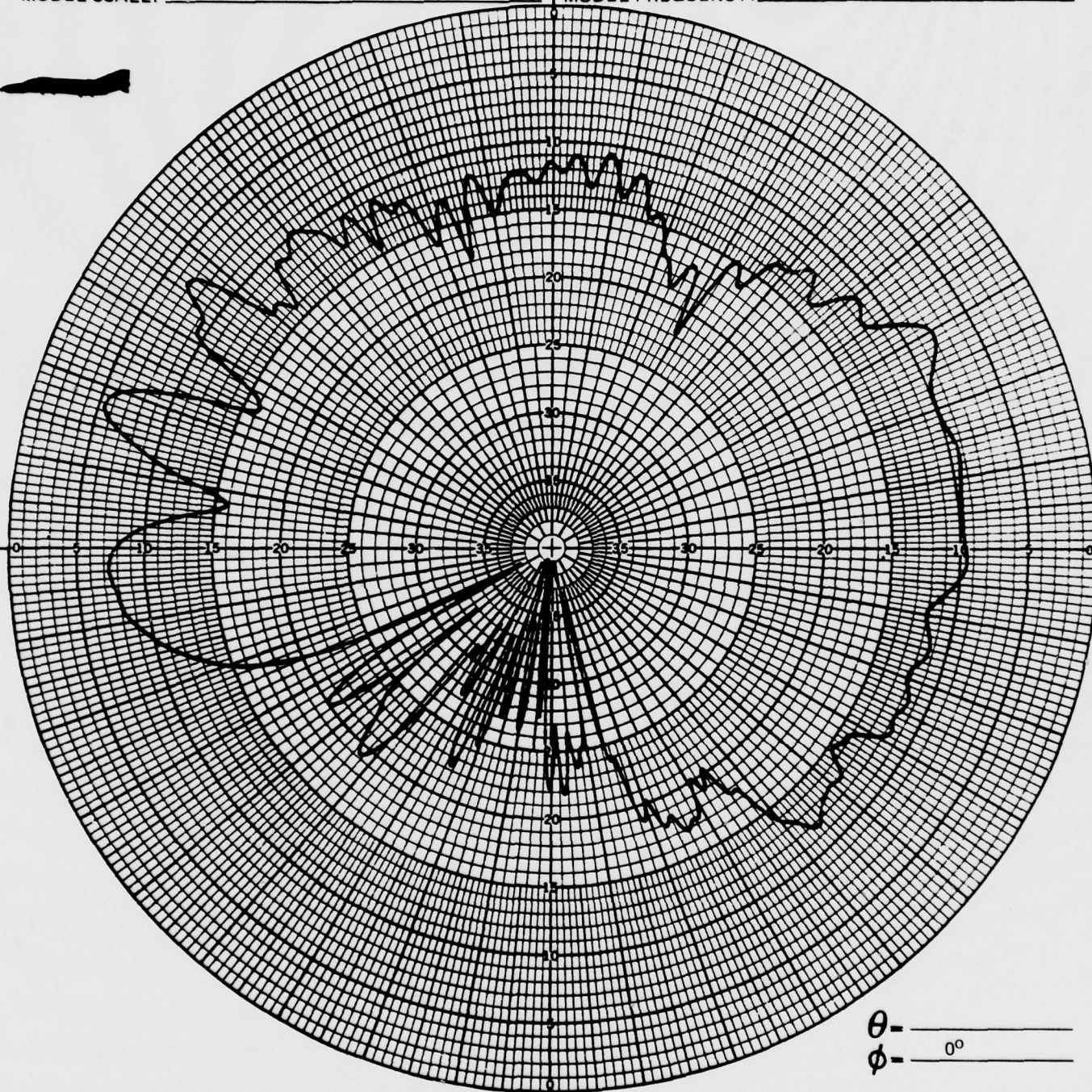
ANTENNA LOCATION: FINCAP

MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)

FULL SCALE FREQUENCY: 325 MHz

MODEL FREQUENCY: 1625 MHz



θ -
 ϕ - 0°

CONFIGURATION: 1

REMARKS:

INTEGRATOR COUNT:

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER:

PLOTTED IN: RELATIVE dB

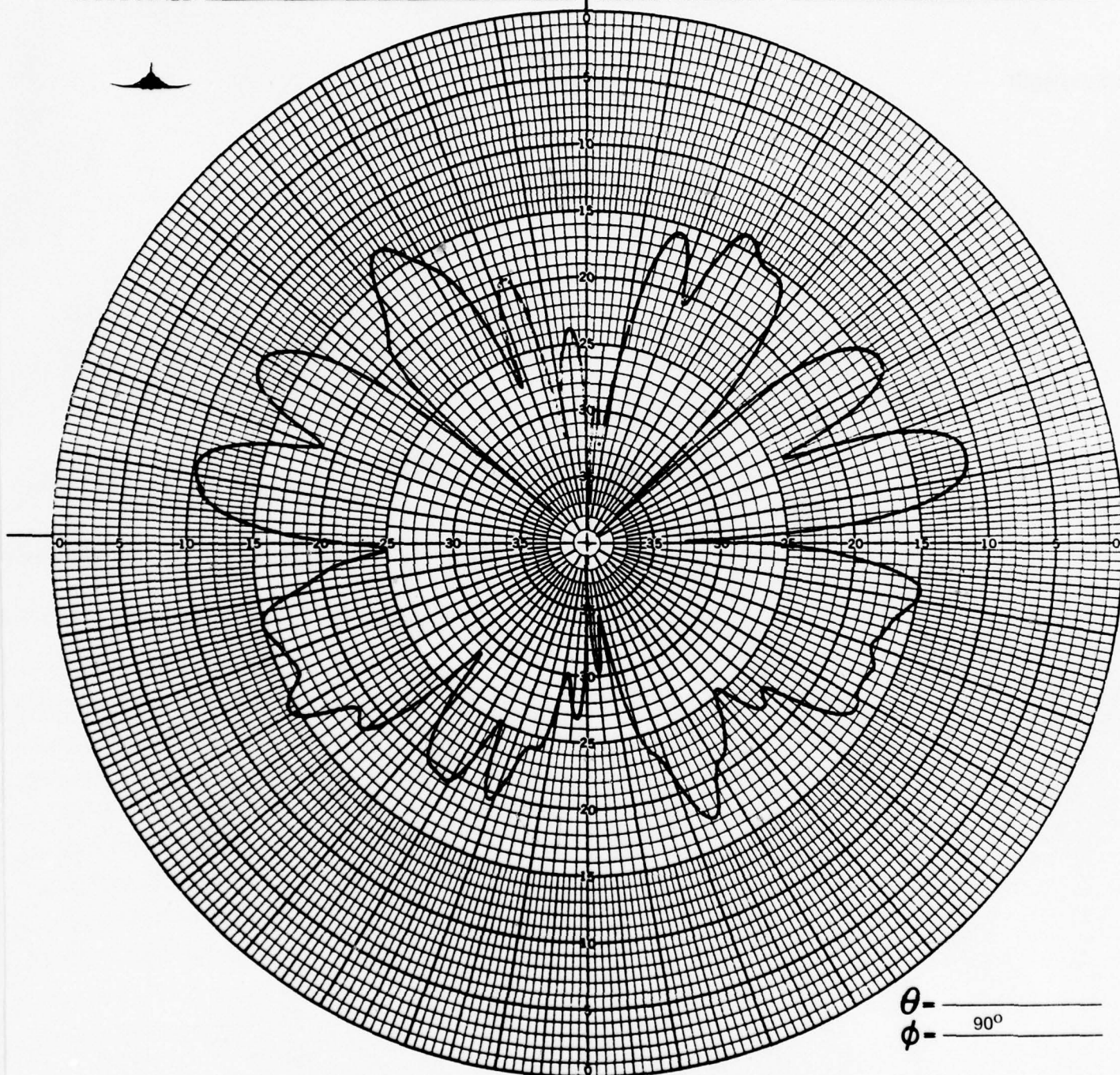
TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 3-16-77

DOCUMENT _____
REVISION _____

ANTENNA: NADC
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 325 MHz
MODEL FREQUENCY: 1625 MHz



θ - _____
 ϕ - 90°

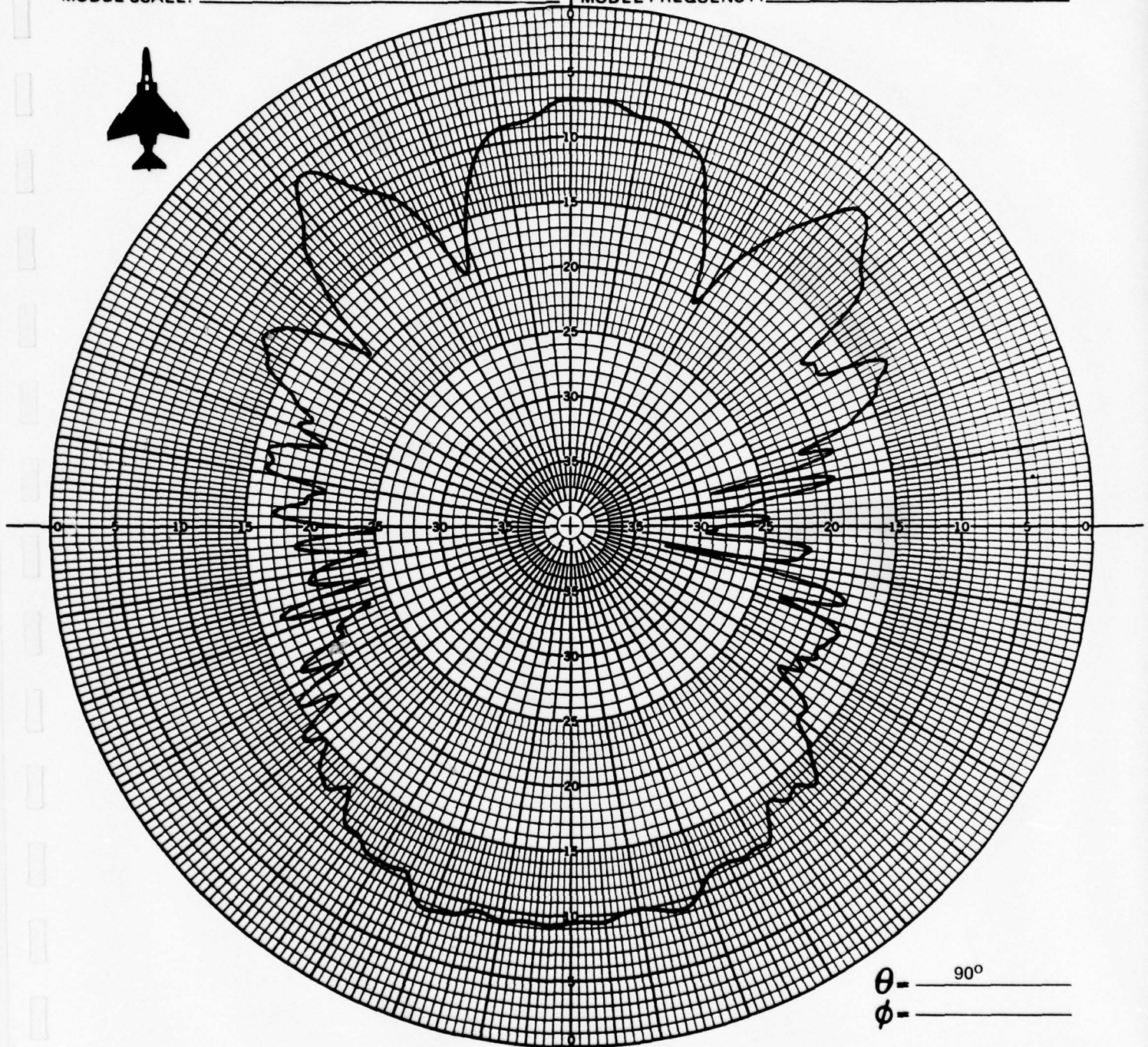
CONFIGURATION: 1
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: 285 FT
OBSERVER: PN, BM DATE: 3-16-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ NADC _____
ANTENNA LOCATION: _____ FINCAP _____
MODEL SCALE: _____ 1/5 _____

TEST IDENT.: _____ 703-174 (F-4) _____
FULL SCALE FREQUENCY: _____ 325 MHz _____
MODEL FREQUENCY: _____ 1625 MHz _____



θ - 90°
 ϕ - _____

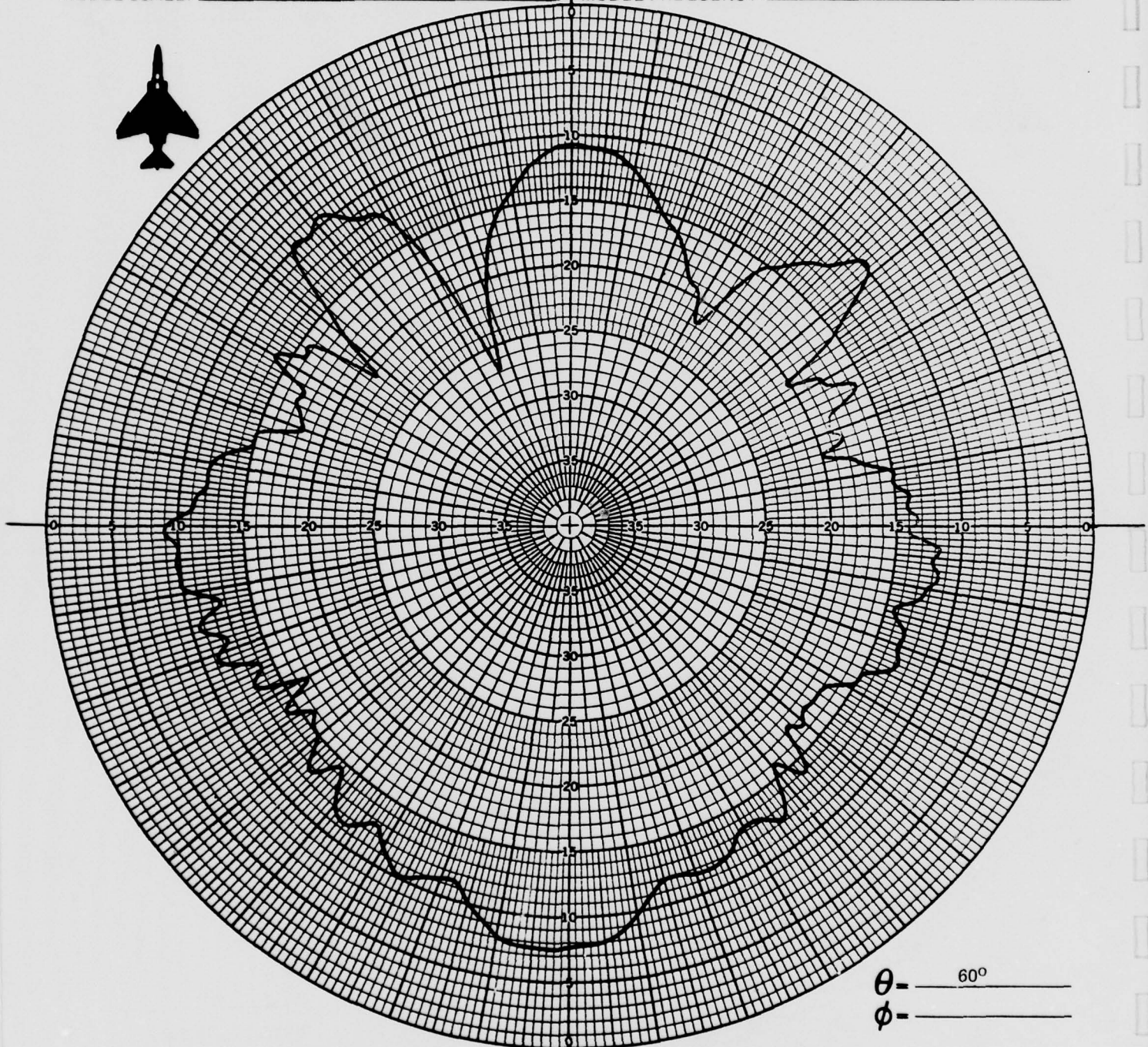
CONFIGURATION: _____ 1 _____
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT _____
OBSERVER: _____ PN, BM _____ DATE: _____ 3-16-77 _____

DOCUMENT _____
REVISION _____

ANTENNA: NADC
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 325 MHz
MODEL FREQUENCY: 1625 MHz



θ - 60°
 ϕ - _____

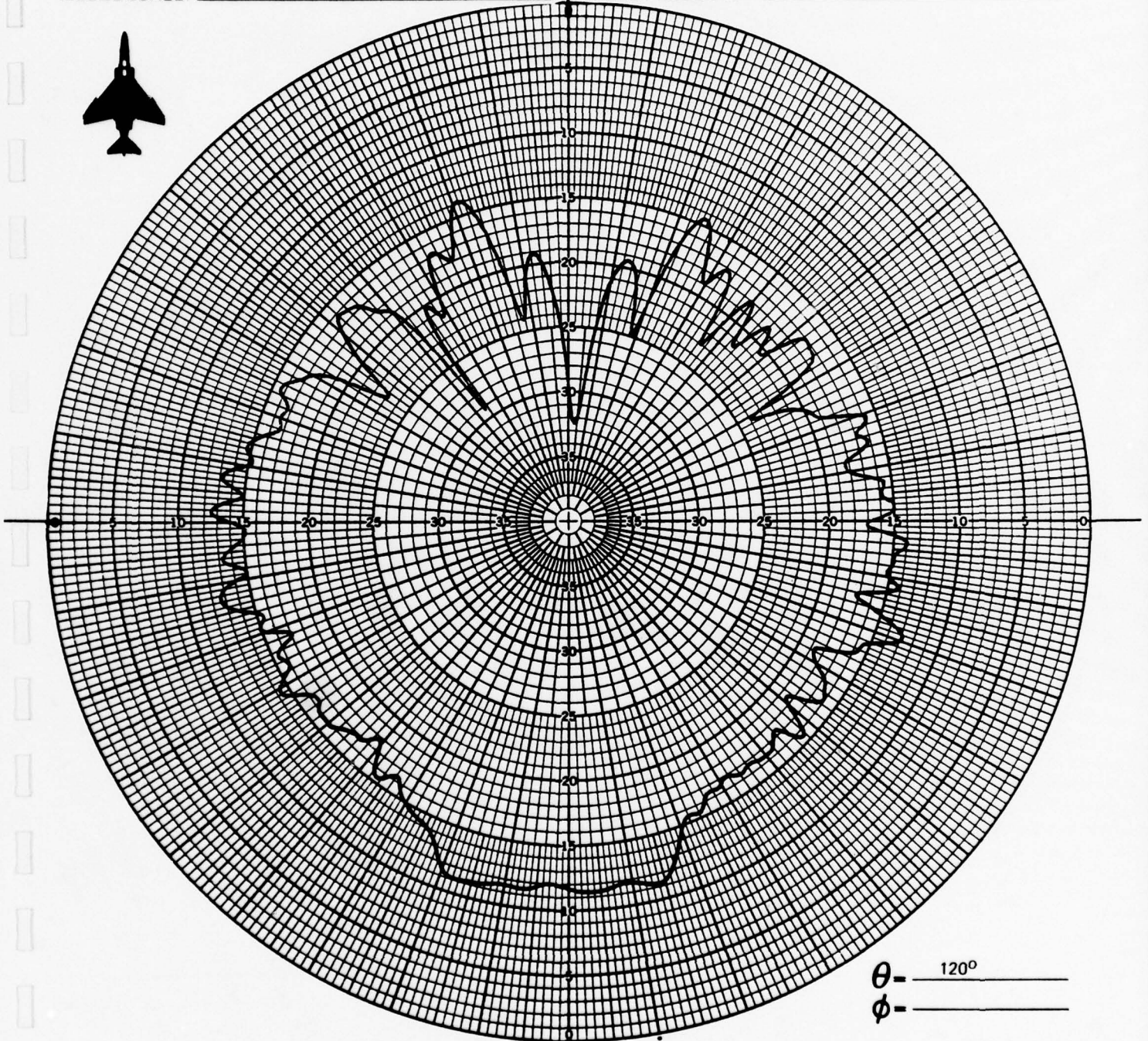
CONFIGURATION: 1
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: 285 FT
OBSERVER: PN, BM DATE: 3-16-77

DOCUMENT _____
REVISION _____

ANTENNA: NADC
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 325 MHz
MODEL FREQUENCY: 1625 MHz



θ - 120°
 ϕ - _____

CONFIGURATION: 1

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

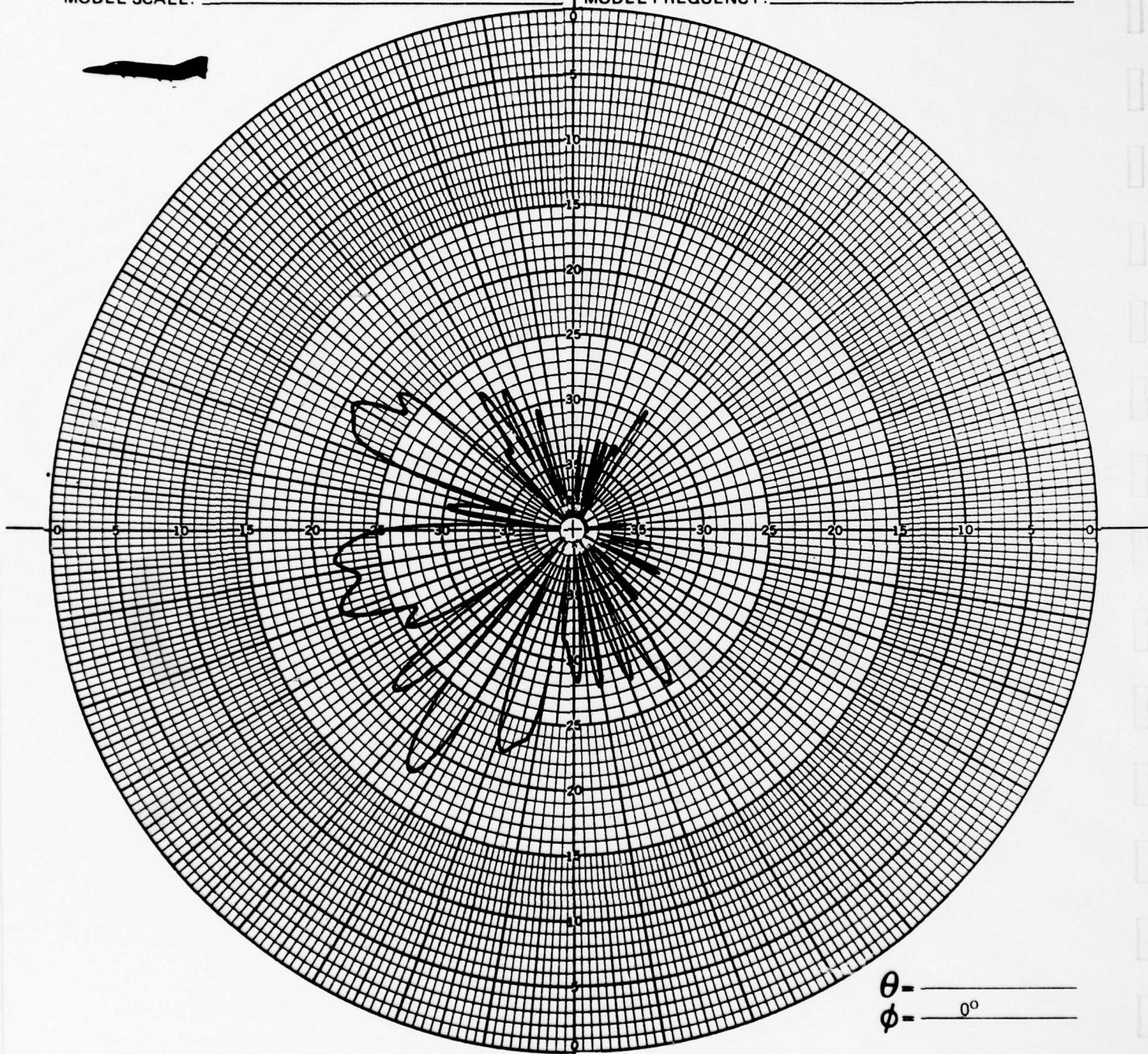
TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 3-16-77

DOCUMENT _____
REVISION _____

ANTENNA: NADC
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 325 MHz
MODEL FREQUENCY: 1625 MHz



θ - _____
 ϕ - 0°

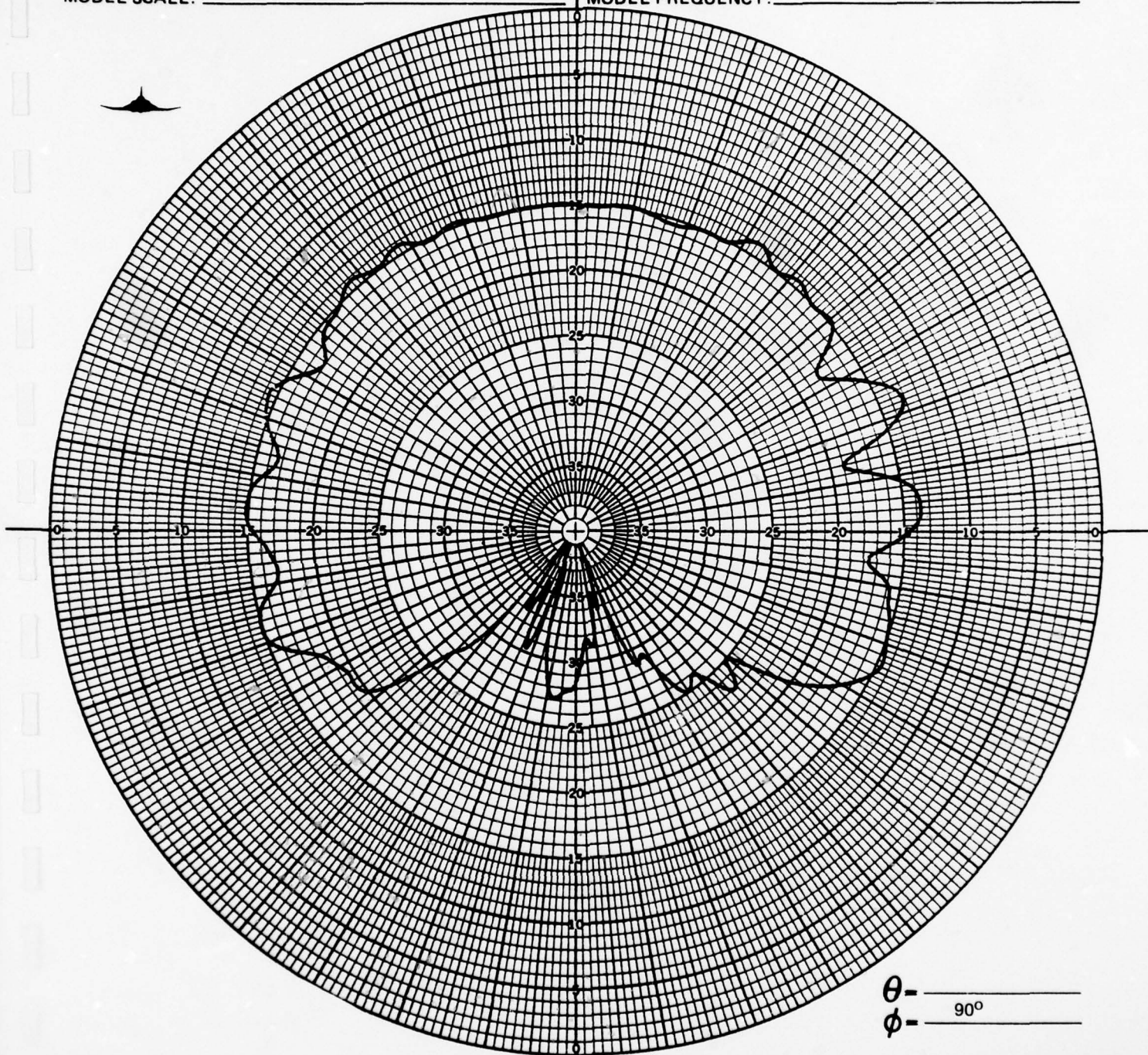
CONFIGURATION: 1
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: ☒ $E\phi$ ☐ $E\theta$ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: 285 FT
OBSERVER: PN, BM DATE: 3-16-77

DOCUMENT _____
REVISION _____

ANTENNA: NADC
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 325 MHz
MODEL FREQUENCY: 1625 MHz



θ - _____
 ϕ - 90°

CONFIGURATION 1

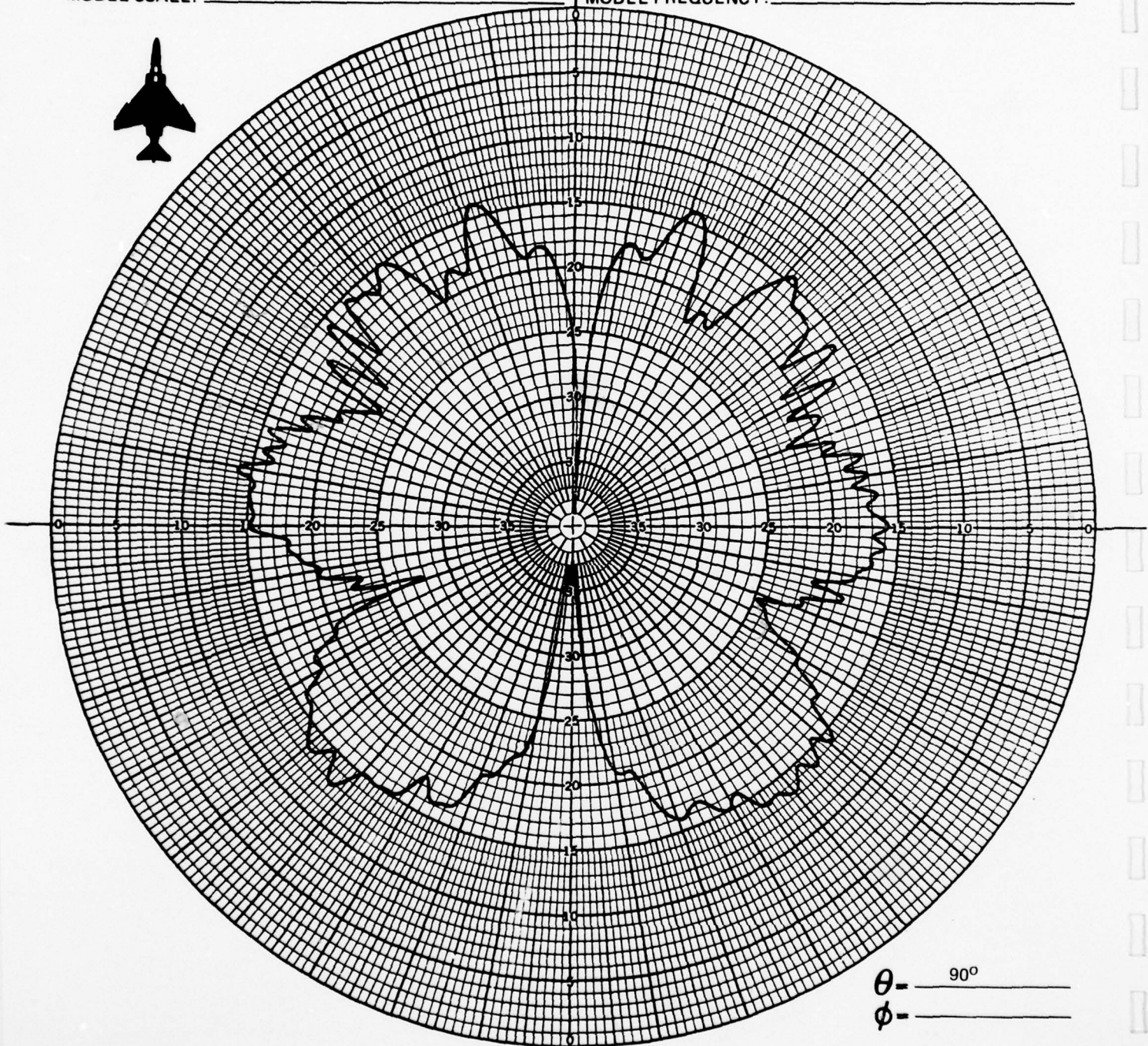
REMARKS _____

INTEGRATOR COUNT: _____
POLARIZATION: E ϕ ☒ E θ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: 285 FT
OBSERVER: PN, BM DATE: 3-16-77

DOCUMENT _____
REVISION _____

ANTENNA: NADC
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 325 MHz
MODEL FREQUENCY: 1625 MHz



θ - 90°
 ϕ - _____

CONFIGURATION: 1

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

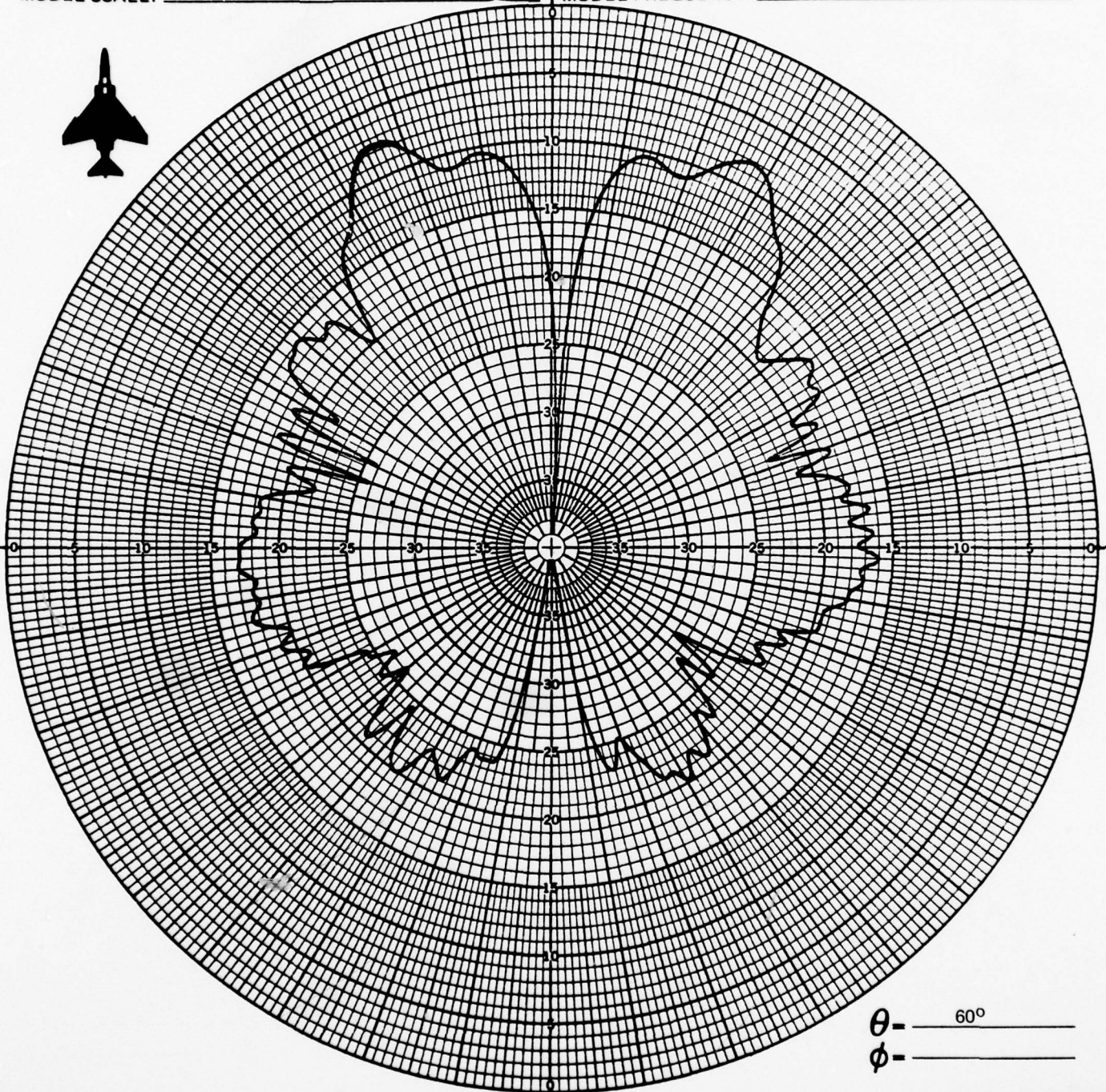
TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 3-16-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ NADC
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 325 MHz
MODEL FREQUENCY: _____ 1625 MHz



θ - _____ 60°
 ϕ - _____

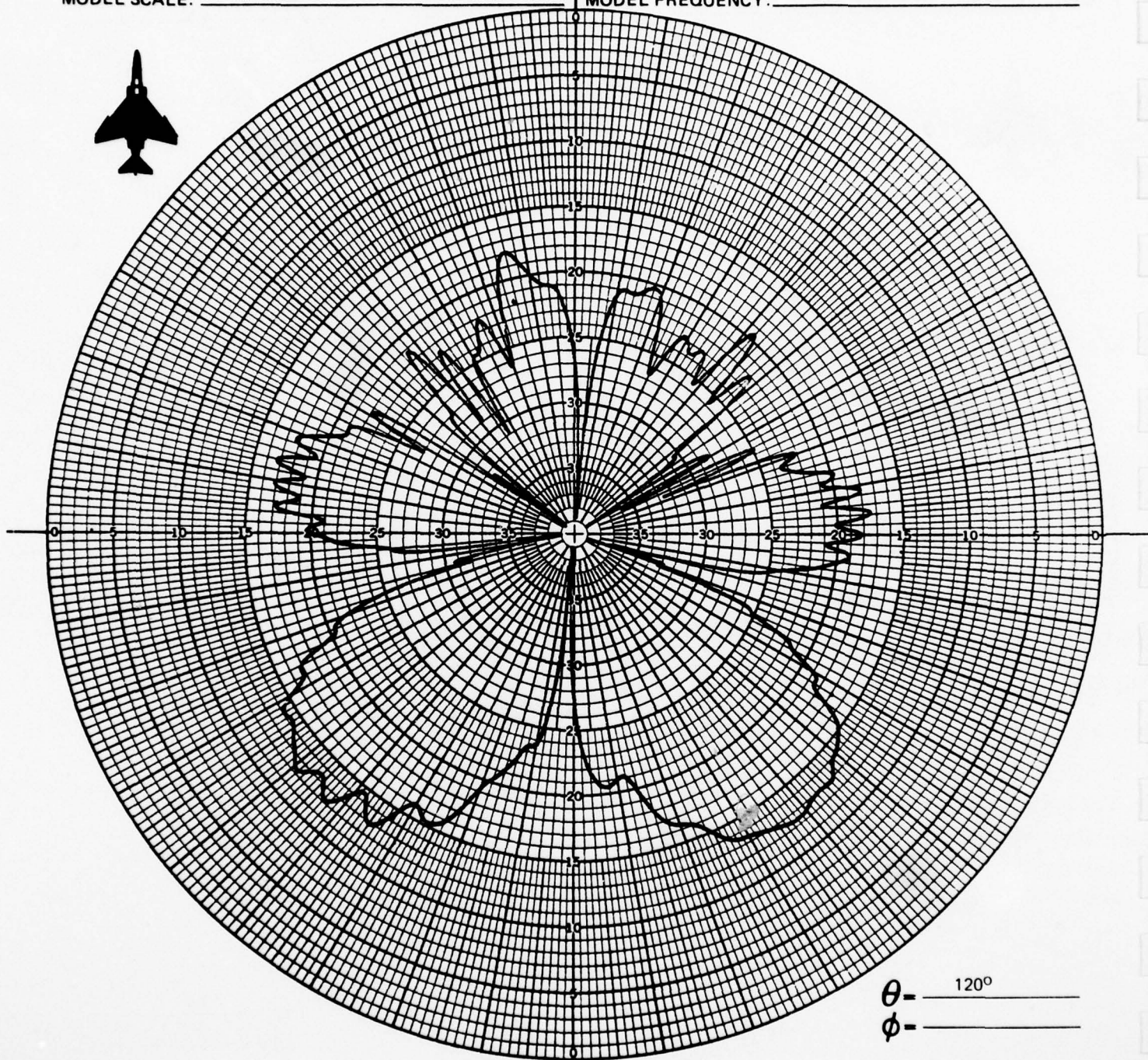
CONFIGURATION: _____ 1
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: _____ 3-16-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ NADC _____
ANTENNA LOCATION: _____ FINCAP _____
MODEL SCALE: _____ 1/5 _____

TEST IDENT.: _____ 703-174 (F-4) _____
FULL SCALE FREQUENCY: _____ 325 MHz _____
MODEL FREQUENCY: _____ 1625 MHz _____



θ - _____ 120°
 ϕ - _____

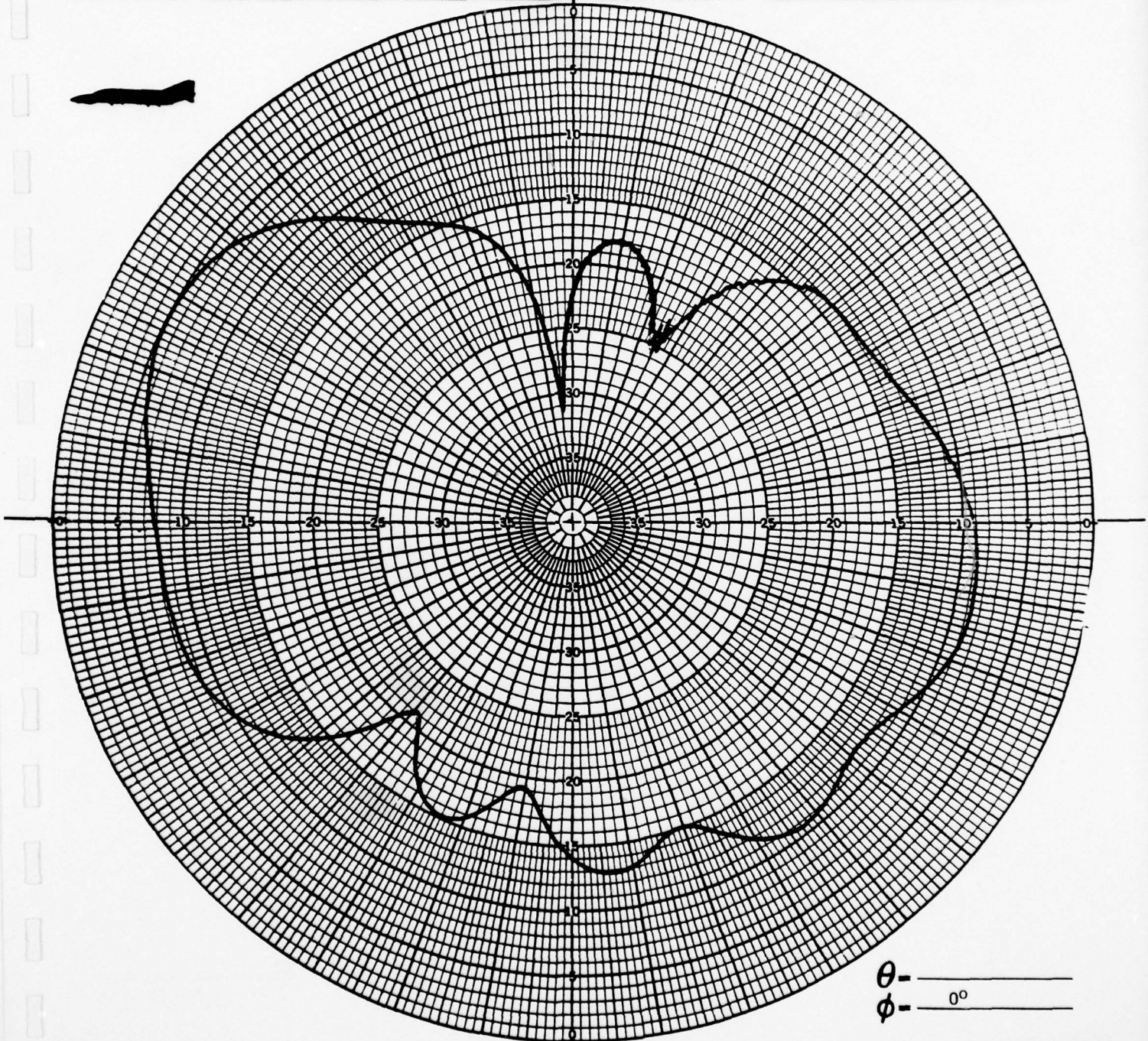
CONFIGURATION: _____ 1 _____
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM _____ DATE: _____ 3-16-77

DOCUMENT _____
REVISION _____

ANTENNA: NADC
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 33 MHz
MODEL FREQUENCY: 165 MHz



θ - _____
 ϕ - 0°

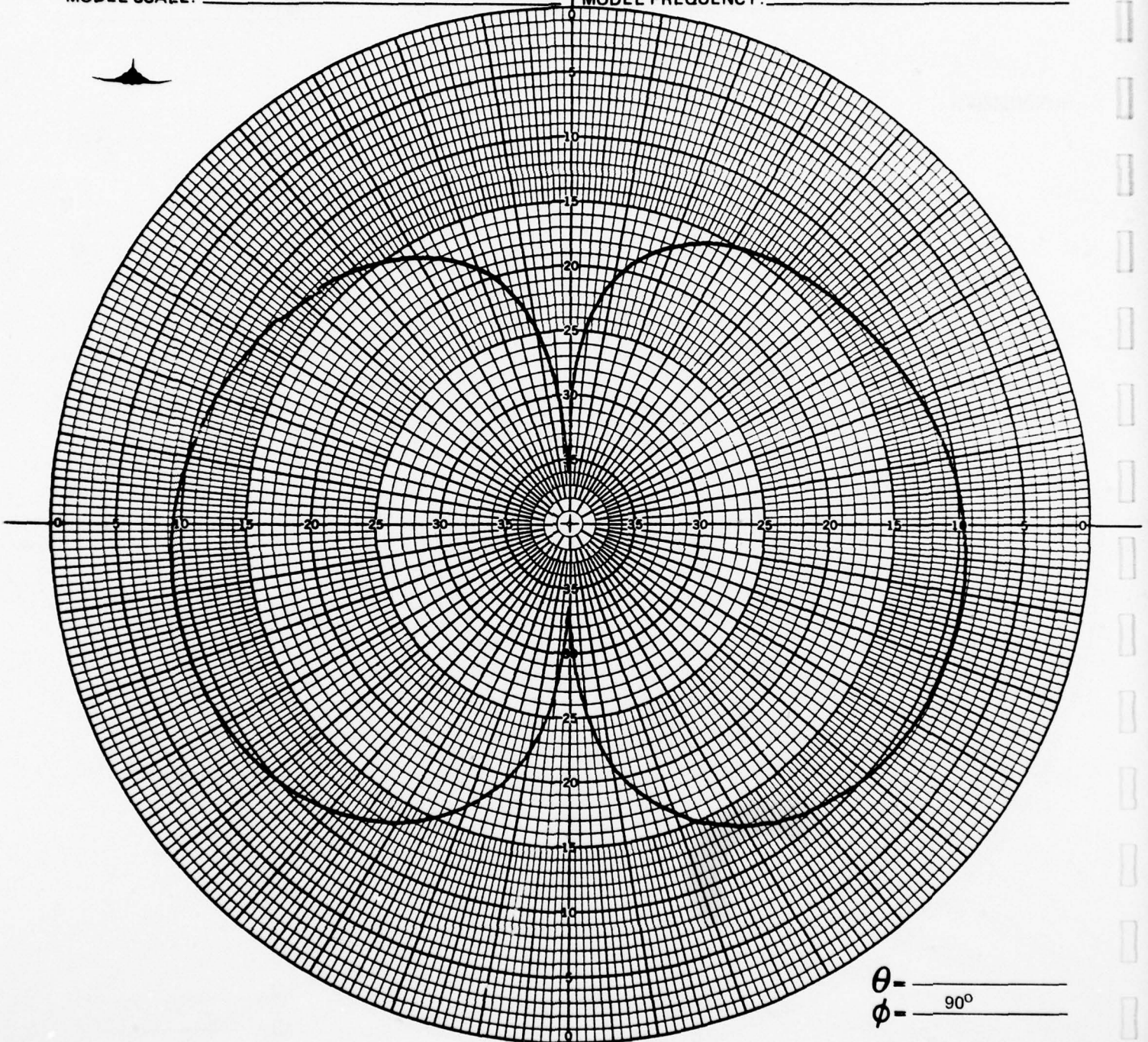
CONFIGURATION: 4
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: 285 FT
OBSERVER: PN, BM DATE: 3-9-77

DOCUMENT _____
REVISION _____

ANTENNA: NADC
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 33 MHz
MODEL FREQUENCY: 165 MHz



CONFIGURATION: 4

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: ☒ E ϕ ☐ E θ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

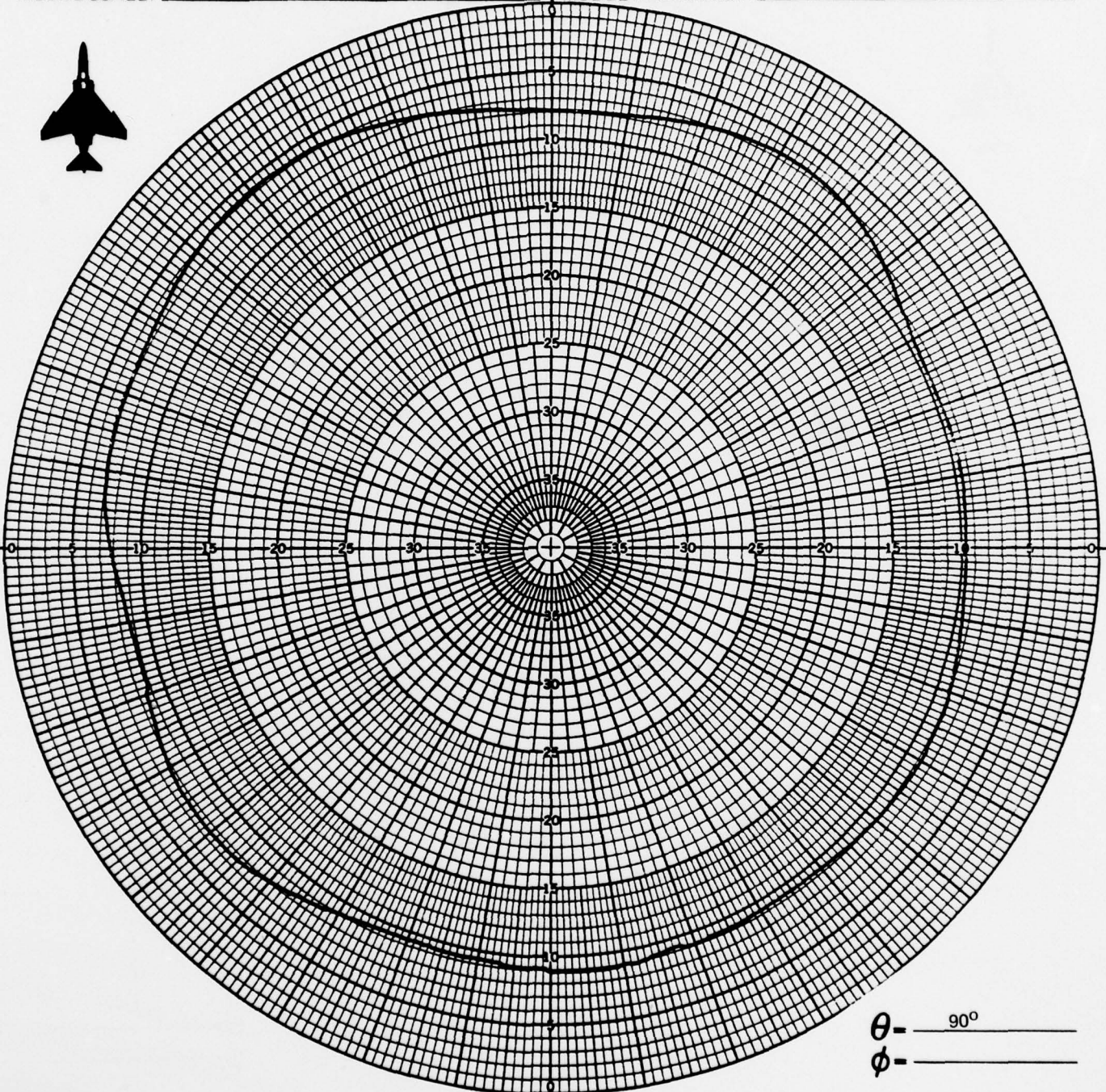
TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 3-9-77

DOCUMENT _____
REVISION _____

ANTENNA: NADC
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 33 MHz
MODEL FREQUENCY: 165 MHz



θ - 90°
 ϕ - _____

CONFIGURATION: 4

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

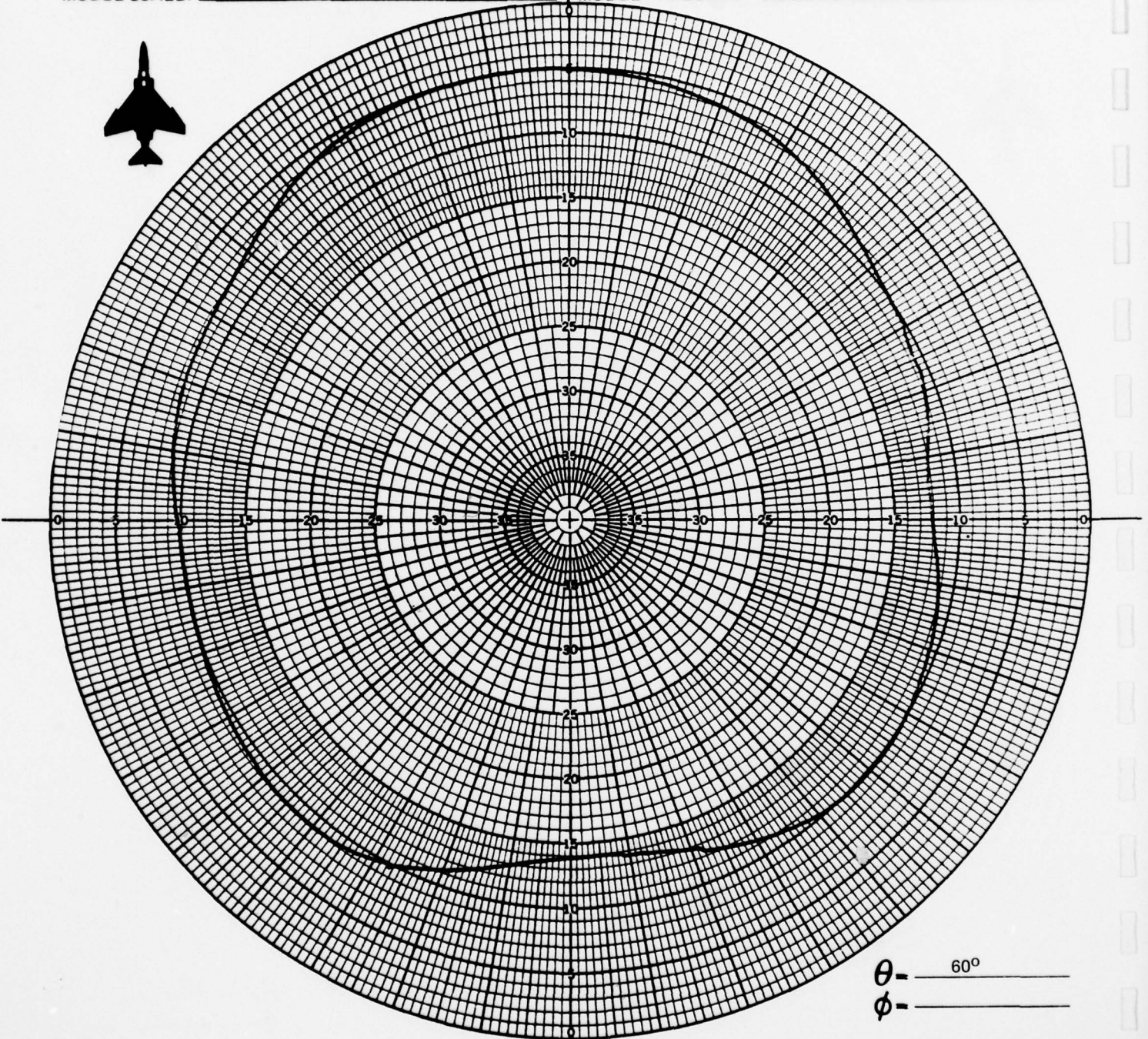
TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 3-9-77

DOCUMENT _____
REVISION _____

ANTENNA: NADC
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 33 MHz
MODEL FREQUENCY: 165 MHz



θ - 60°
 ϕ - _____

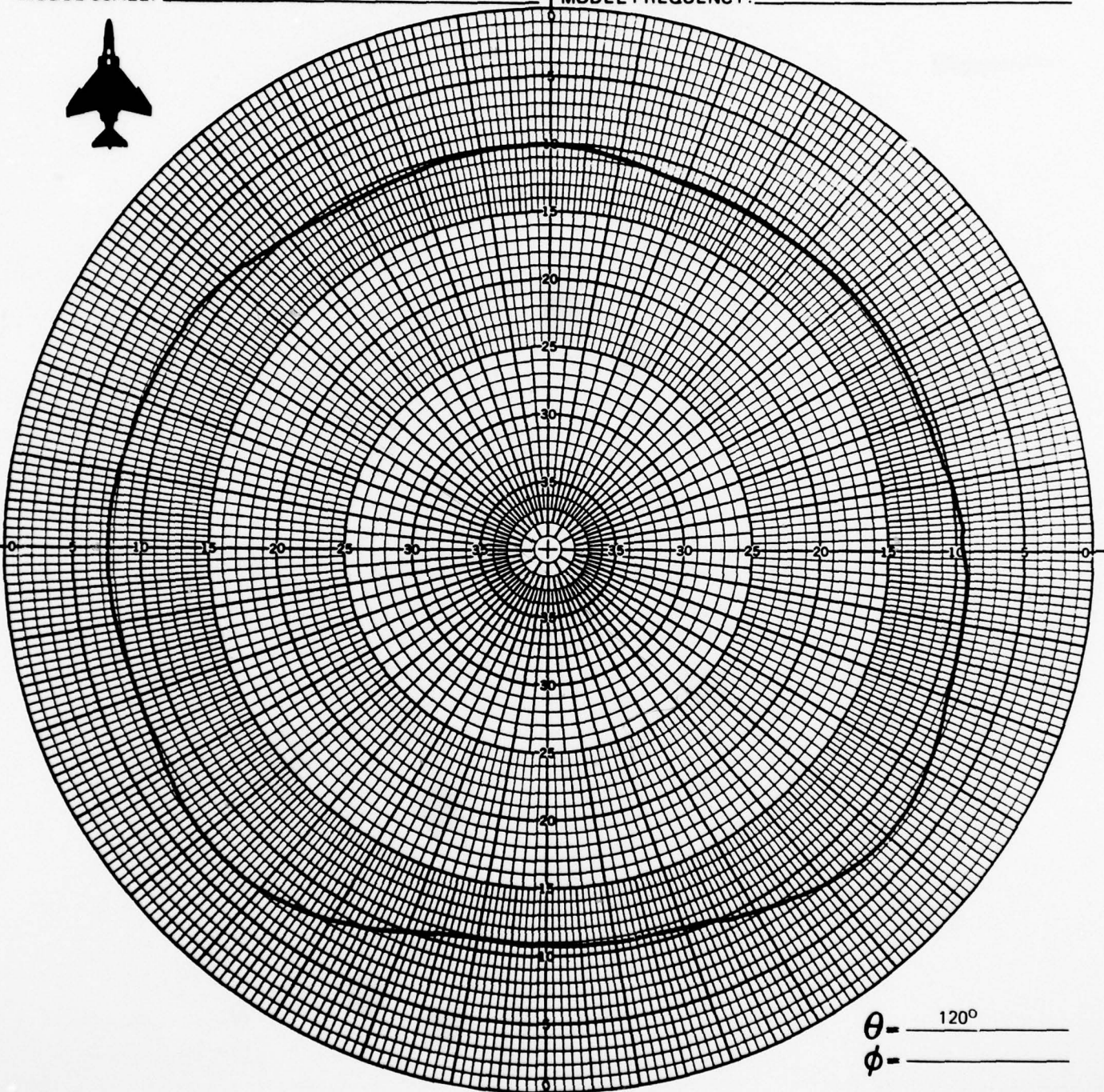
CONFIGURATION: 4
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: 285 FT
OBSERVER: PN, BM DATE: 3-9-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ NADC
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 33 MHz
MODEL FREQUENCY: _____ 165 MHz



θ - _____ 120°
 ϕ - _____

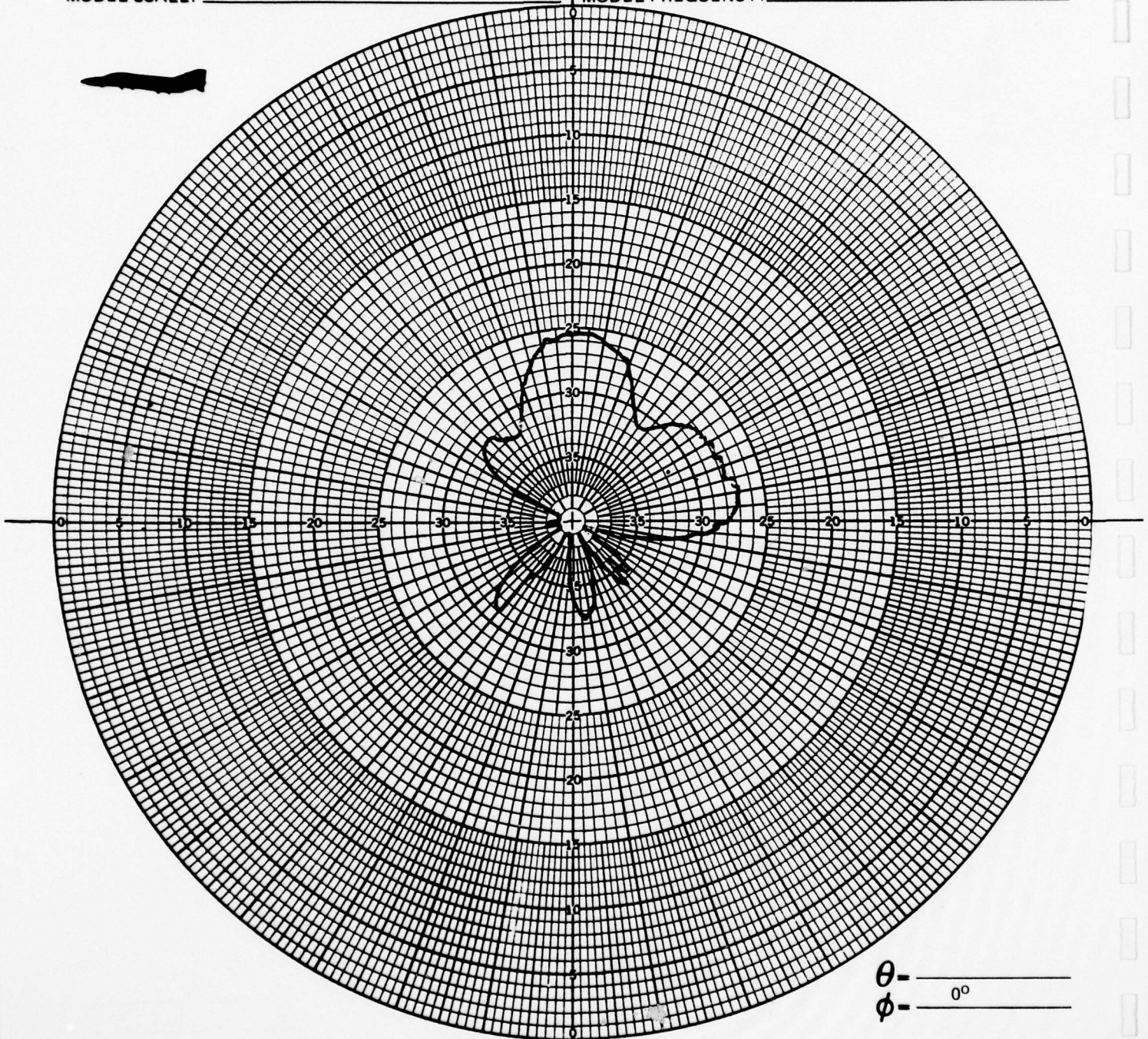
CONFIGURATION: _____ 4
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: _____ 3-9-77

DOCUMENT _____
REVISION _____

ANTENNA: NADC
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 33 MHz
MODEL FREQUENCY: 165 MHz



CONFIGURATION: 4

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: ☒ E ☐ ϕ ☐ E ☐ θ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 3-9-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ NADC _____

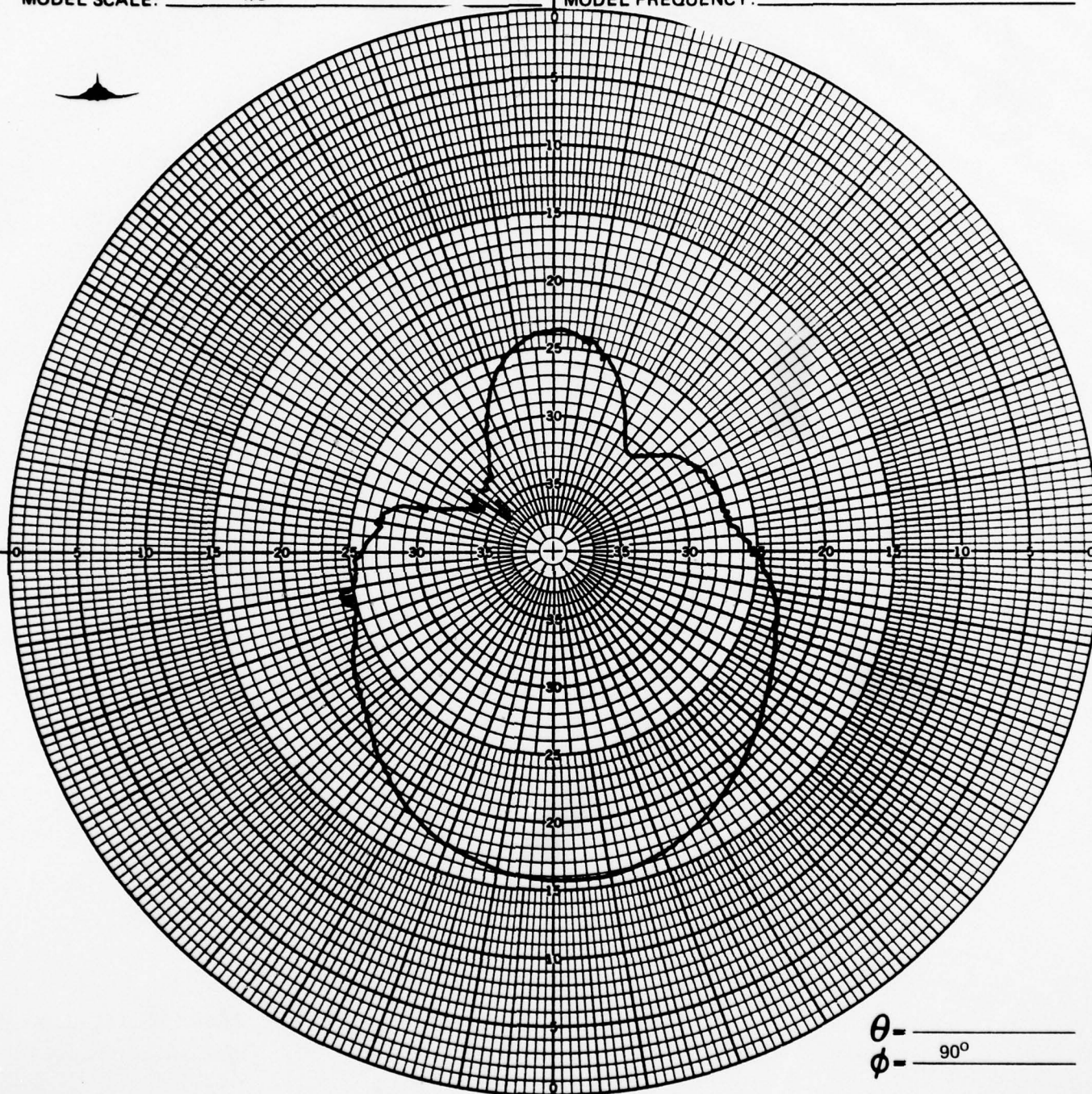
TEST IDENT.: _____ 703-174 (F-4) _____

ANTENNA LOCATION: _____ FINCAP _____

FULL SCALE FREQUENCY: _____ 33 MHz _____

MODEL SCALE: _____ 1/5 _____

MODEL FREQUENCY: _____ 165 MHz _____



CONFIGURATION: _____ 4 _____

INTEGRATOR COUNT: _____

REMARKS: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

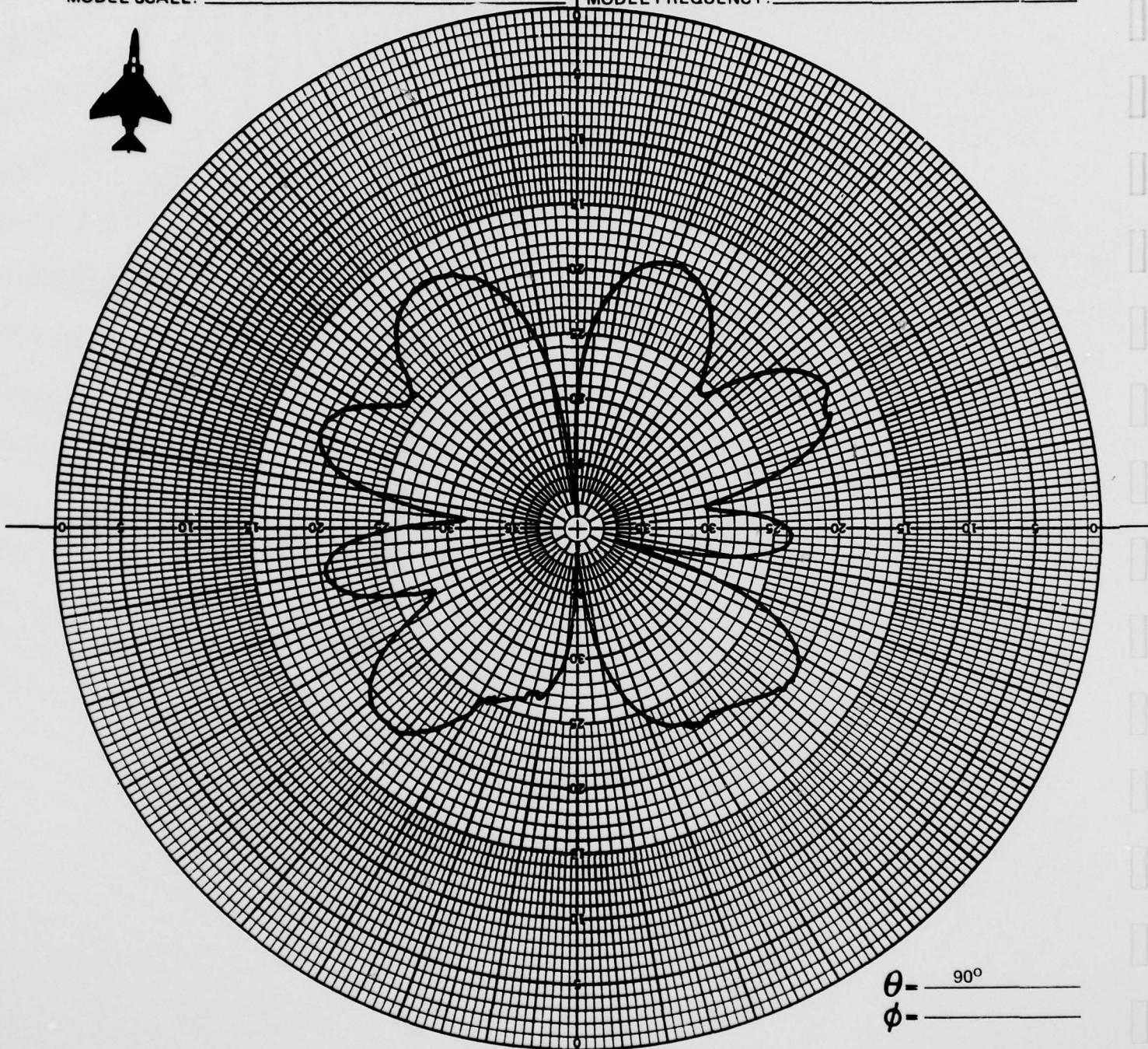
TRANSMISSION DISTANCE: _____ 285 FT _____

OBSERVER: _____ PN, BM _____ DATE: _____ 3-9-77 _____

DOCUMENT _____
REVISION _____

ANTENNA: _____ NADC _____
ANTENNA LOCATION: _____ FINCAP _____
MODEL SCALE: _____ 1/5 _____

TEST IDENT.: _____ 703-174 (F-4) _____
FULL SCALE FREQUENCY: _____ 33 MHz _____
MODEL FREQUENCY: _____ 165 MHz _____



θ - 90°
 ϕ -

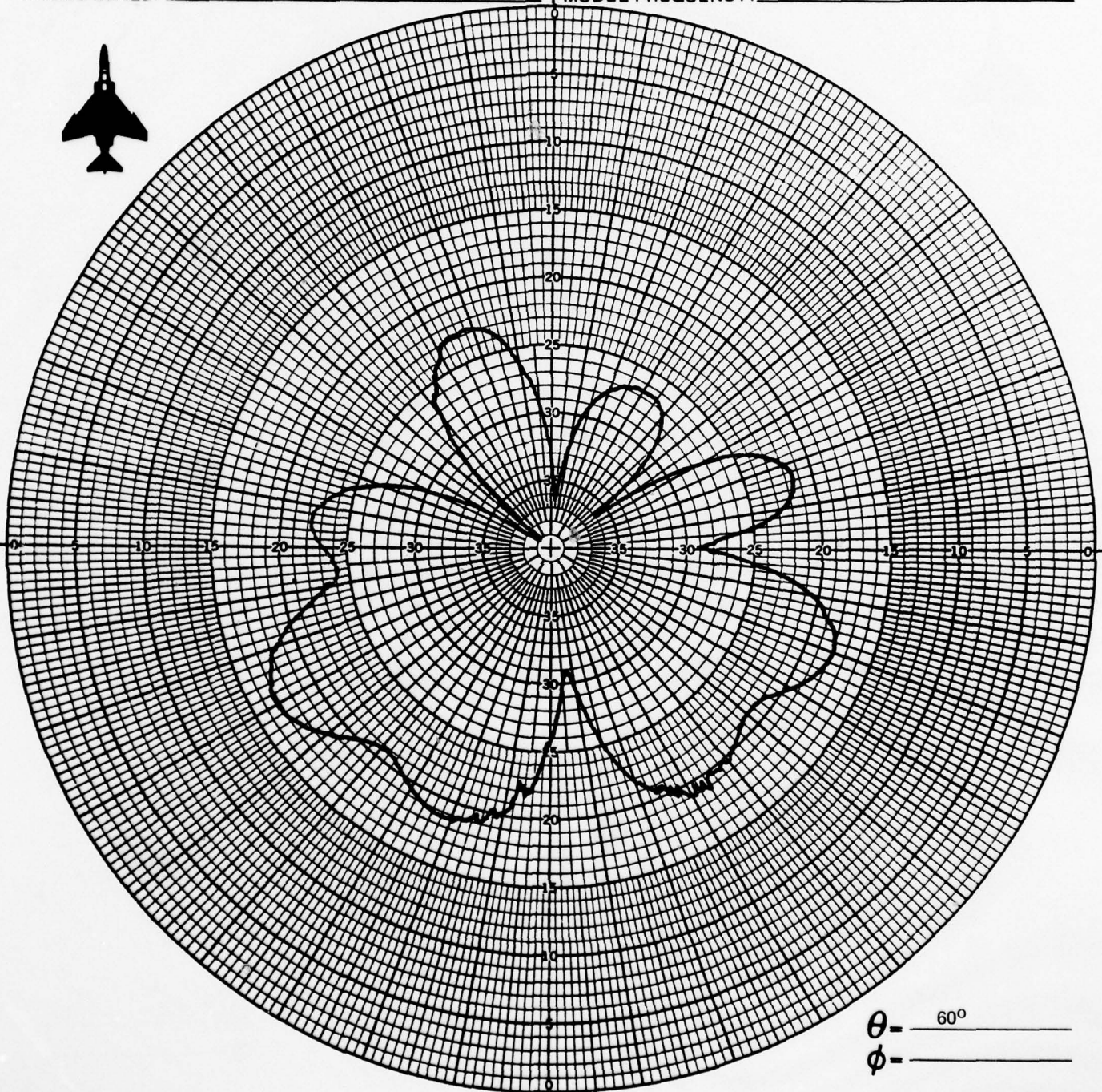
CONFIGURATION: _____ 4 _____
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM _____ DATE: _____ 3-9-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ NADC
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 33 MHz
MODEL FREQUENCY: _____ 165 MHz



θ - 60°
 ϕ - _____

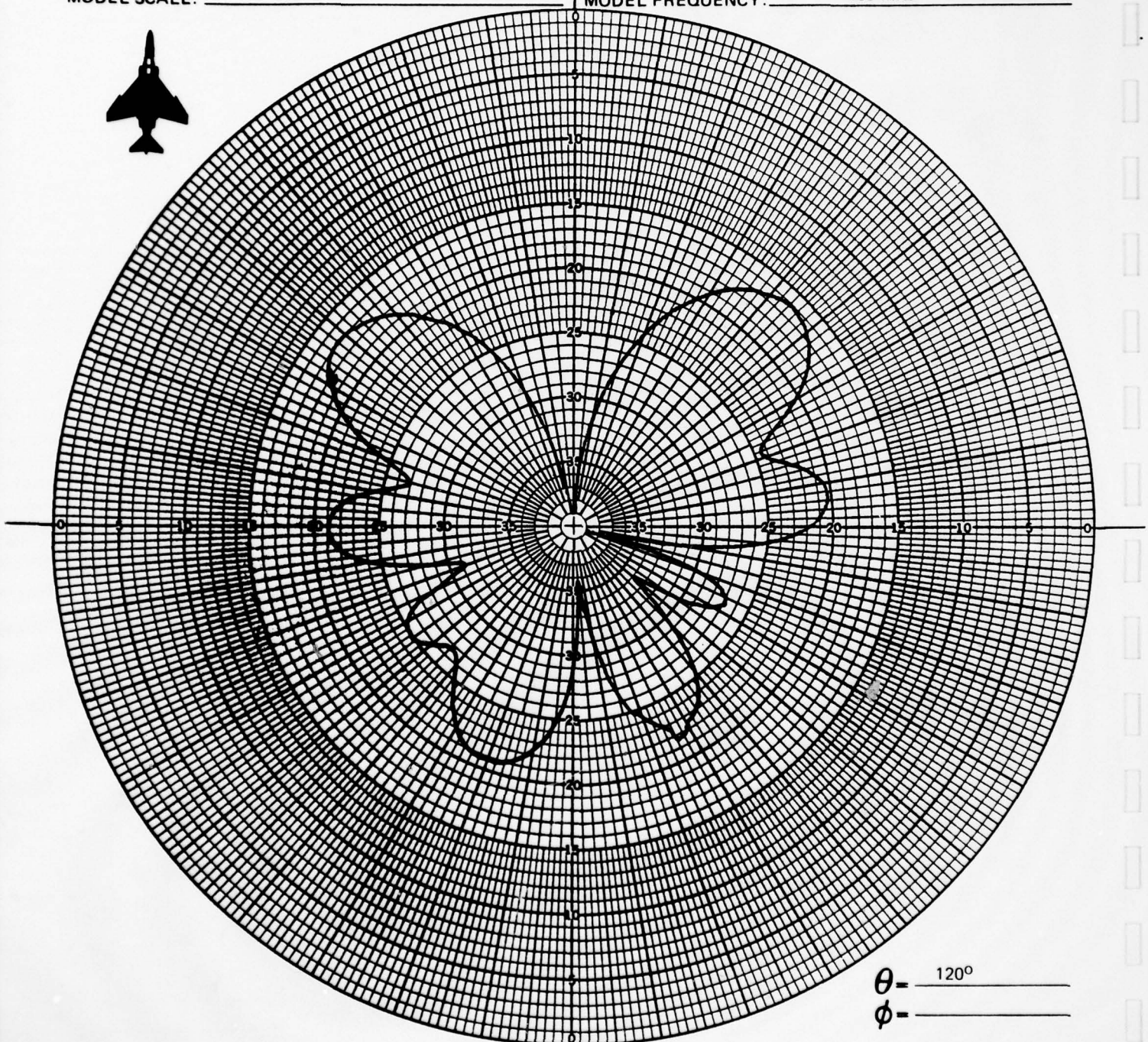
CONFIGURATION: _____ 4
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: E ϕ ☒ E θ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: 3-9-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ NADC
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 33 MHz
MODEL FREQUENCY: _____ 165 MHz



θ - _____ 120°
 ϕ - _____

CONFIGURATION: _____ 4
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: ☒ E ϕ ☐ E θ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: _____ 3-9-77

AD-A049 699

MCDONNELL AIRCRAFT CO ST LOUIS MO
MULTIBAND ANTENNA SYSTEM FOR TACTICAL AIRCRAFT.(U)
SEP 77 F W VORTMEIER

F/G 17/2.1

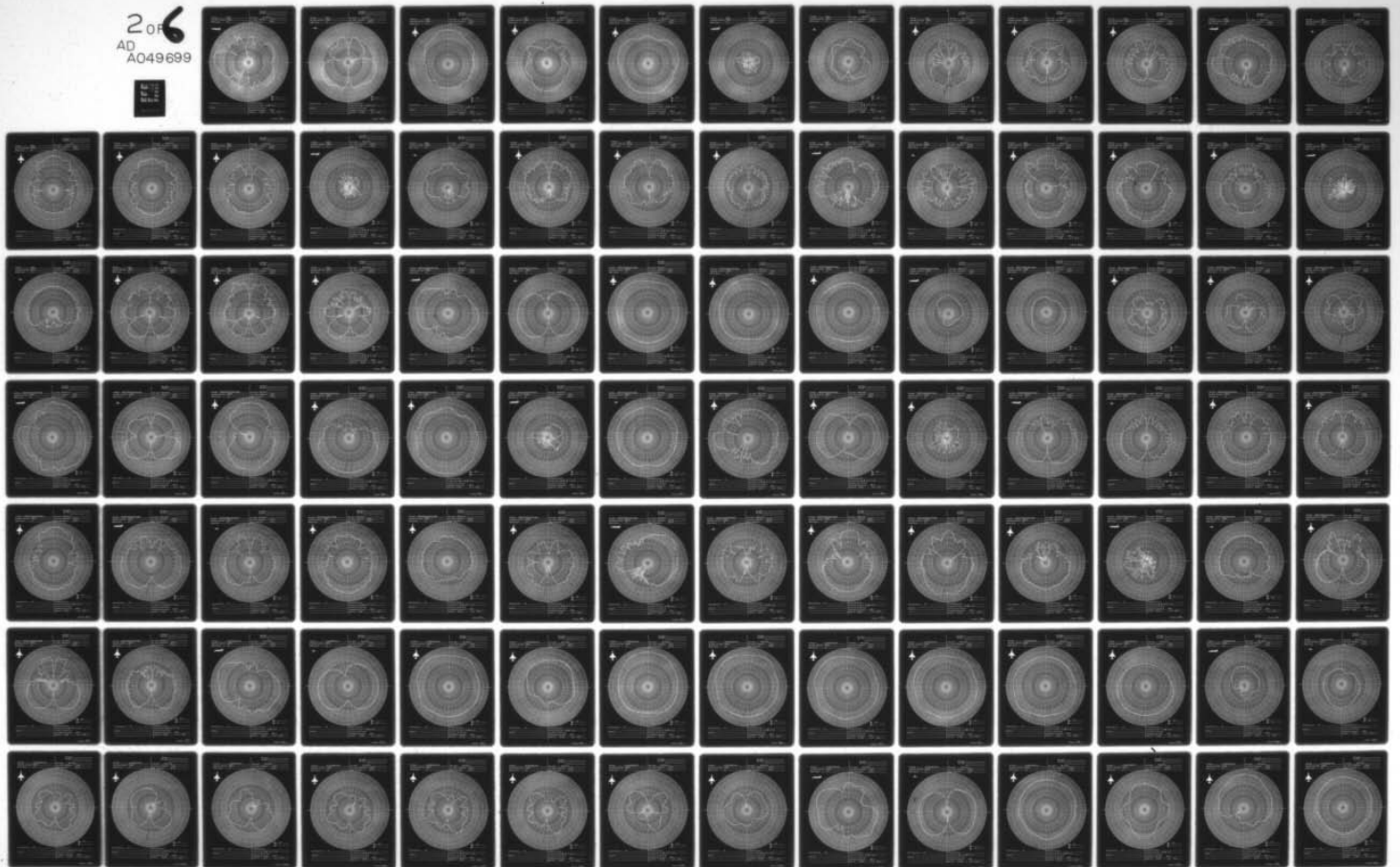
UNCLASSIFIED

NADC-76240-20

N62269-77-C-0138

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2 of 6
AD
A049699



DOCUMENT _____

REVISION _____

ANTENNA: NADC

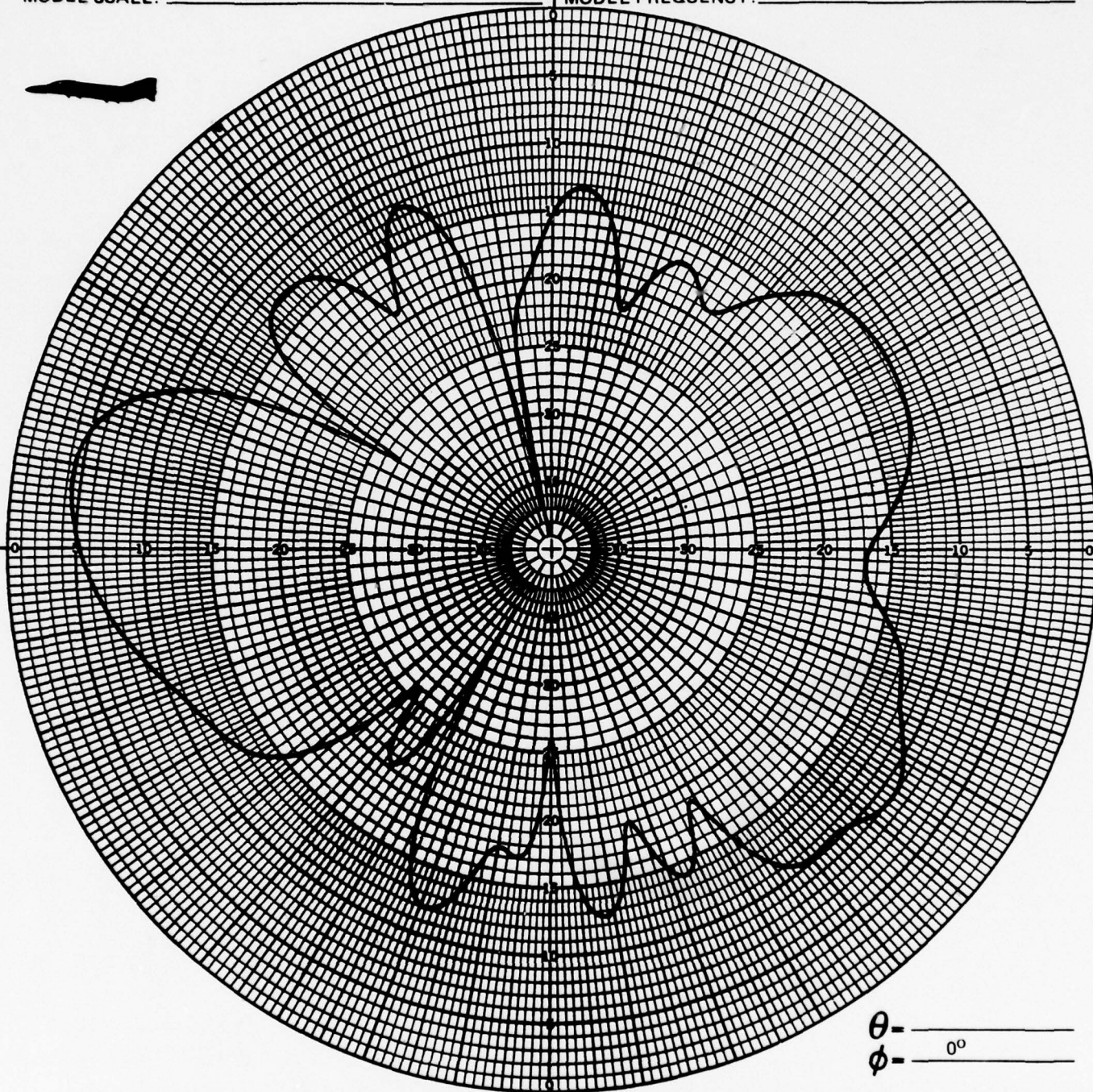
ANTENNA LOCATION: FINCAP

MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)

FULL SCALE FREQUENCY: 76 MHz

MODEL FREQUENCY: 380 MHz



θ - _____
 ϕ - 0°

CONFIGURATION: 4

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

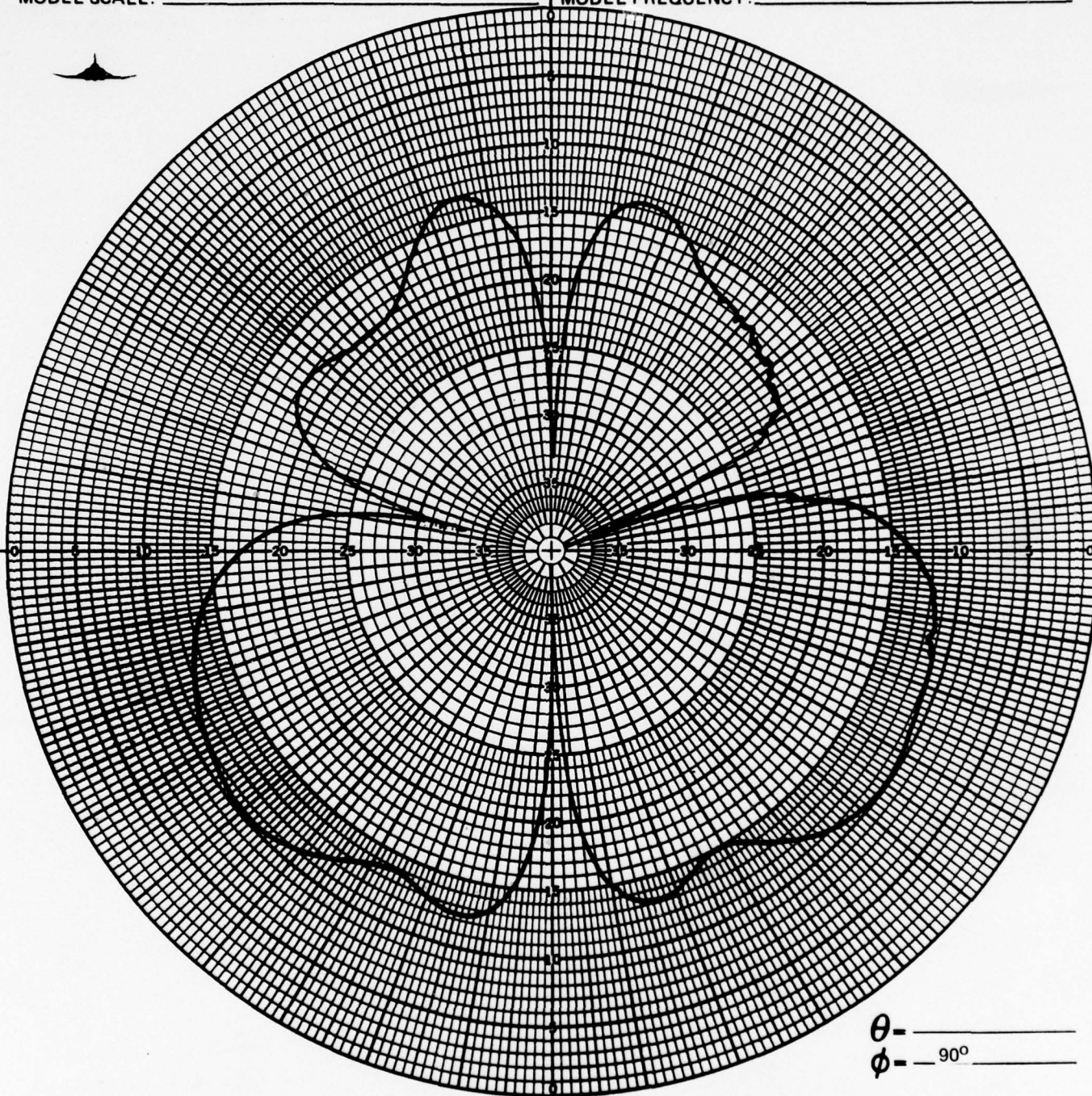
TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 3-9-77

DOCUMENT _____
REVISION _____

ANTENNA: NADC
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 76 MHz
MODEL FREQUENCY: 380 MHz



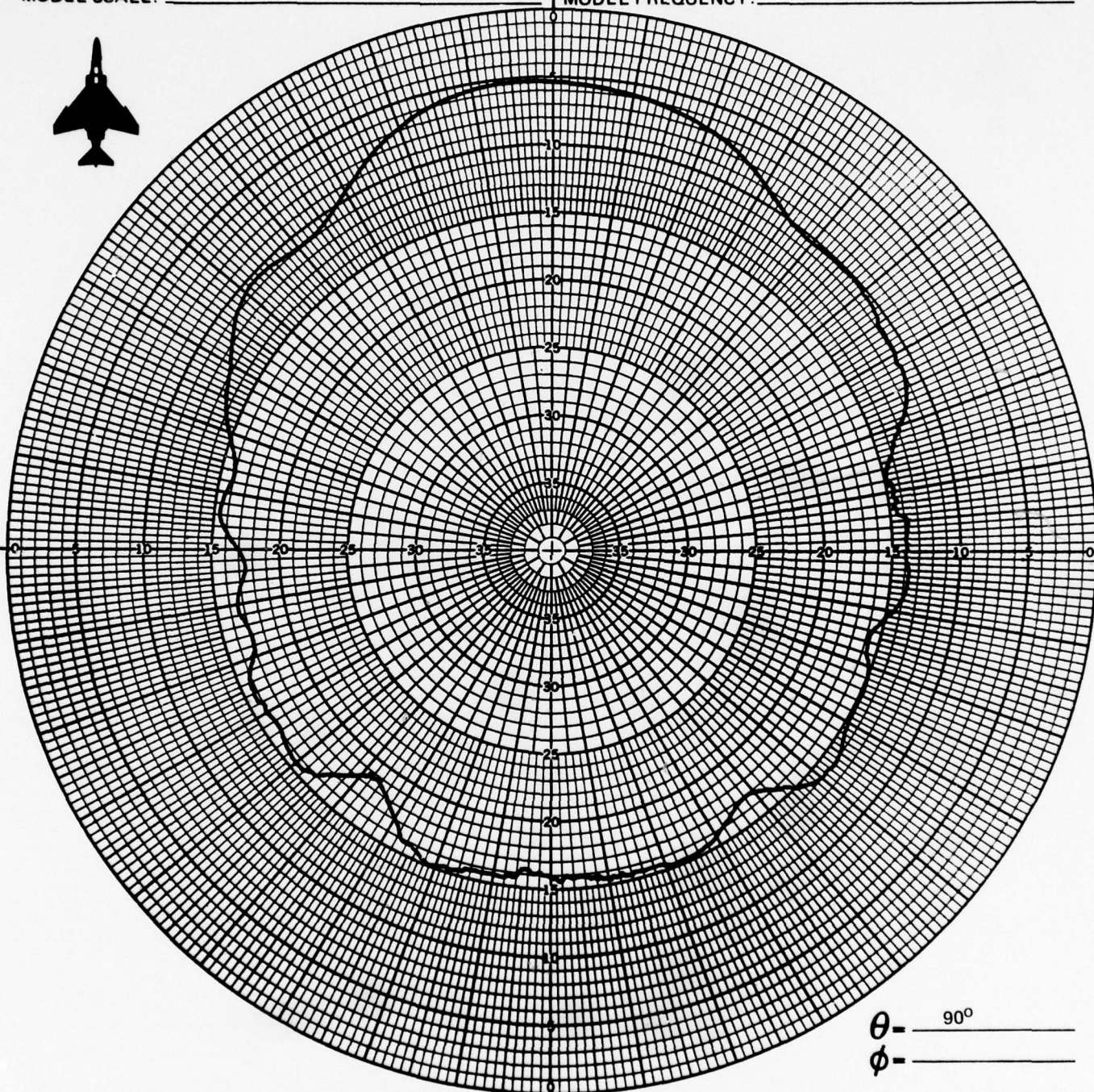
CONFIGURATION: 4
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: ☒ $E\phi$ ☐ $E\theta$ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: 285 FT
OBSERVER: PN, BM DATE: 3-9-77

DOCUMENT _____
REVISION _____

ANTENNA: NADC
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 76 MHz
MODEL FREQUENCY: 380 MHz



θ - 90°
 ϕ - _____

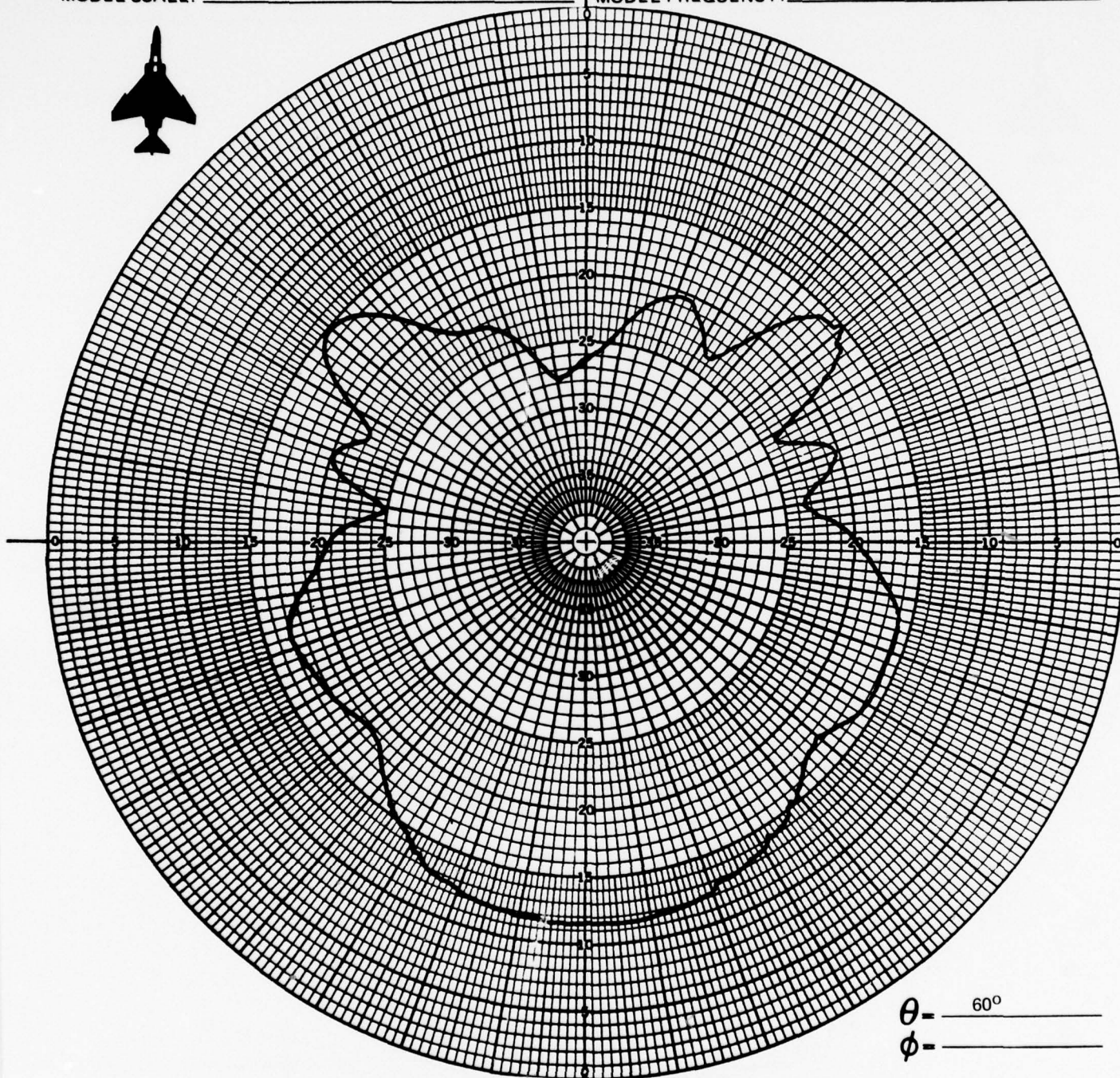
CONFIGURATION: 4
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: 285 FT
OBSERVER: PN, BM DATE: 3-9-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ NADC
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 76 MHz
MODEL FREQUENCY: _____ 380 MHz



θ - _____ 60°
 ϕ - _____

CONFIGURATION: _____ 4

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: E ☐ ϕ ☐ E ☒ θ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

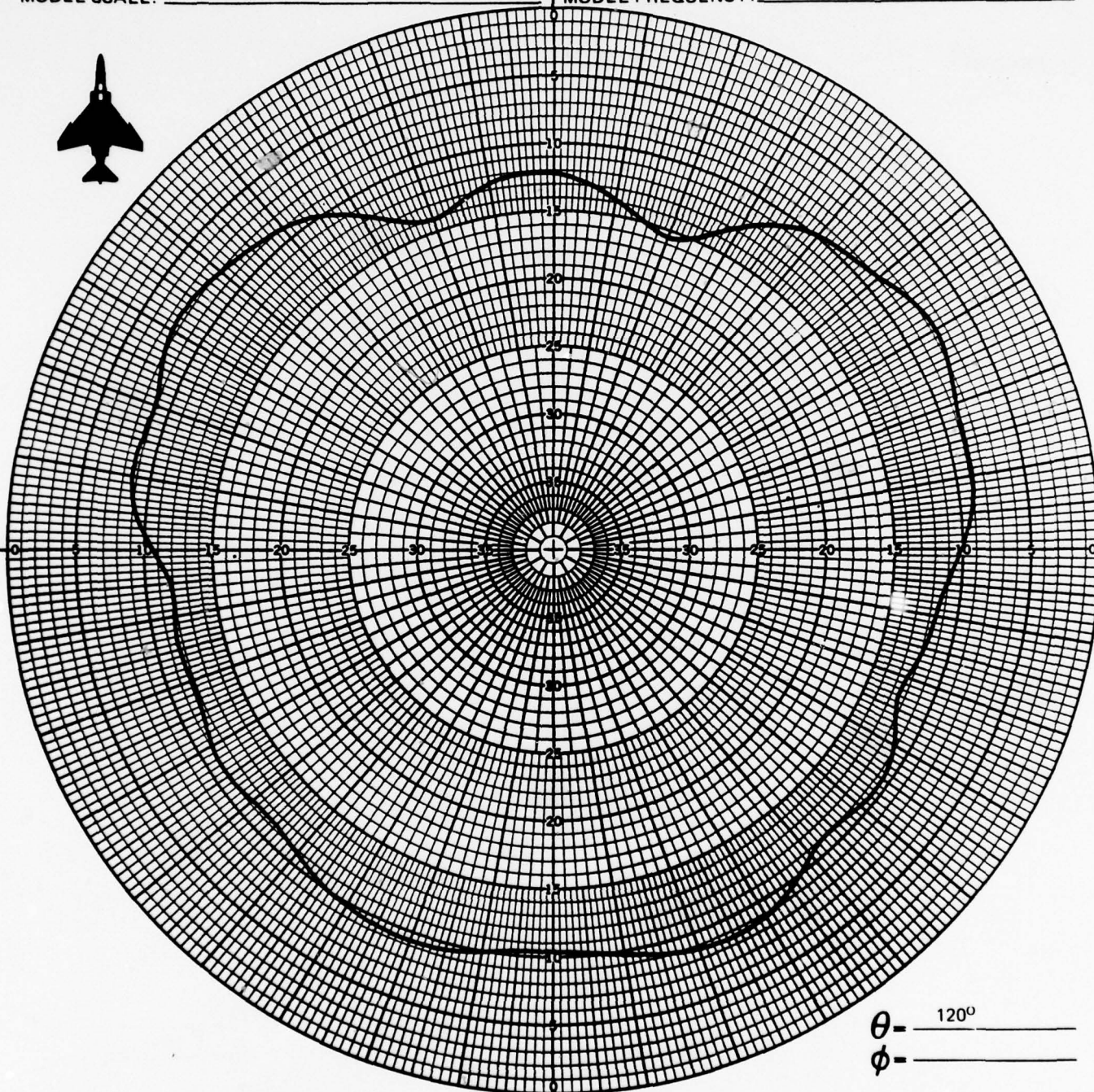
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM _____ DATE: _____ 3-9-77

DOCUMENT _____
REVISION _____

ANTENNA: NADC
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 76 MHz
MODEL FREQUENCY: 380 MHz



θ - 120°
 ϕ - _____

CONFIGURATION: 4

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

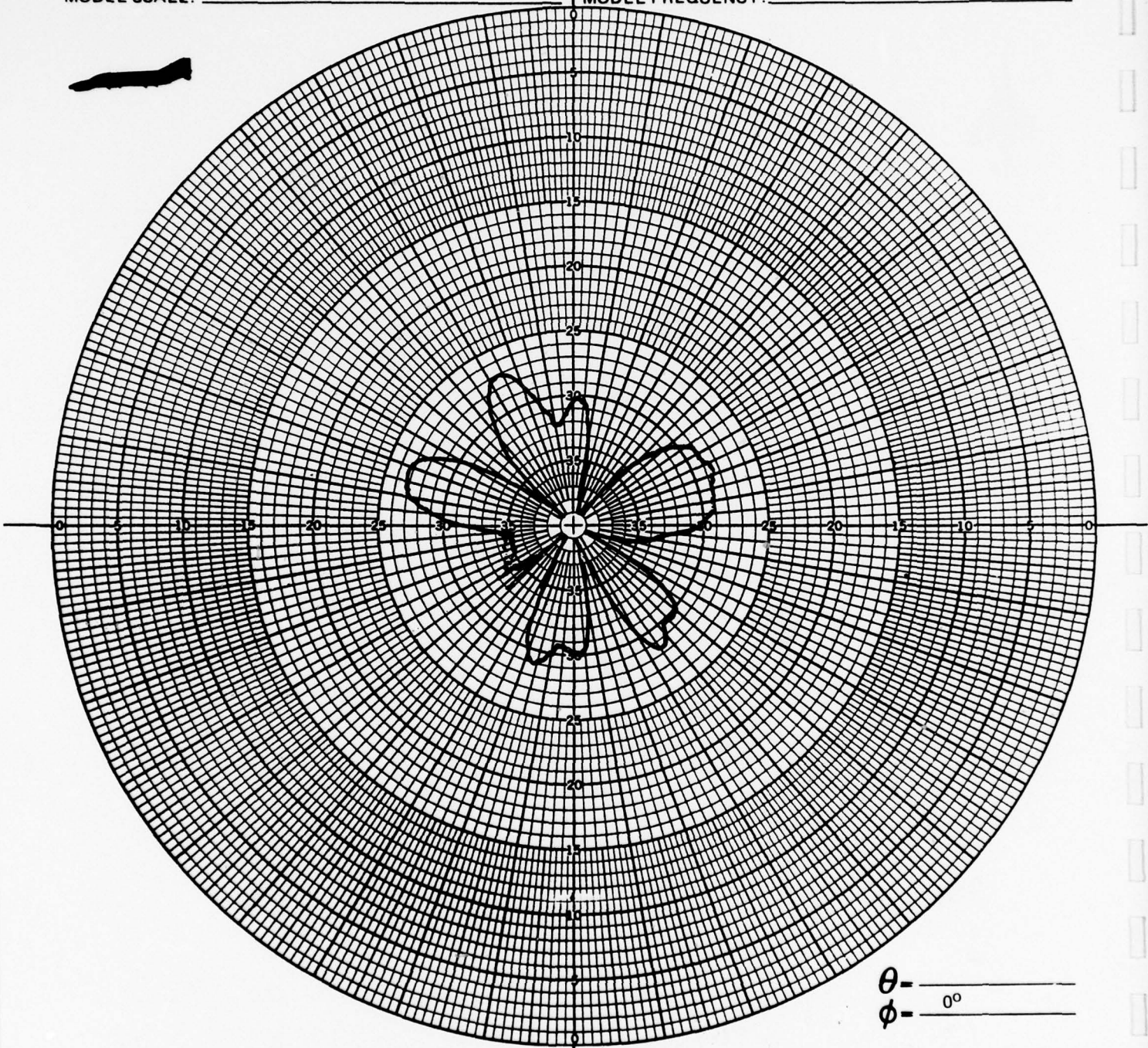
TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 3-9-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ NADC
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 76 MHz
MODEL FREQUENCY: _____ 380 MHz



θ - _____
 ϕ - _____ 0°

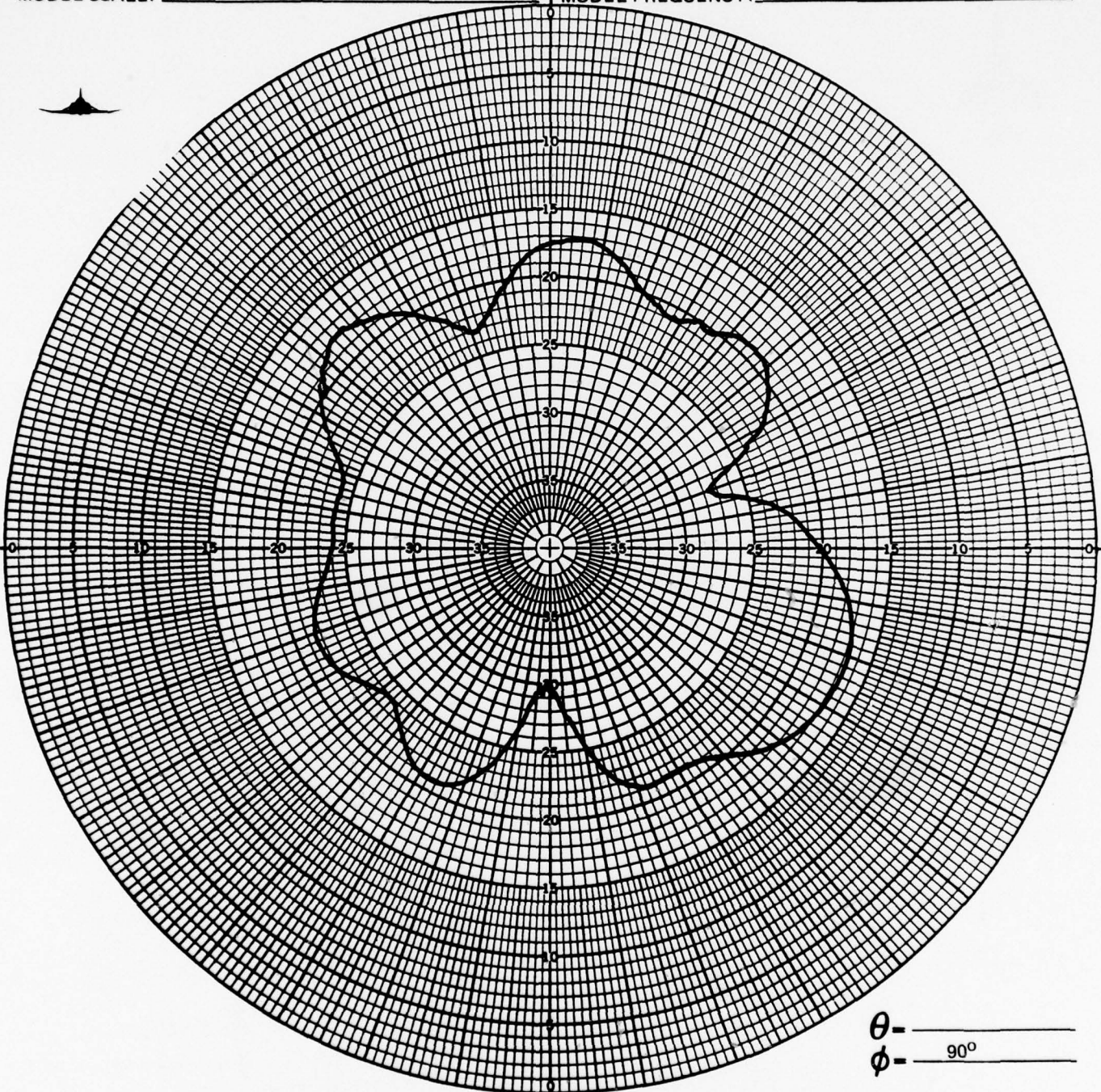
CONFIGURATION: _____ 4
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: E ϕ ☒ E θ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: _____ 3-9-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ NADC
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 76 MHz
MODEL FREQUENCY: _____ 380 MHz



θ - _____
 ϕ - _____ 90°

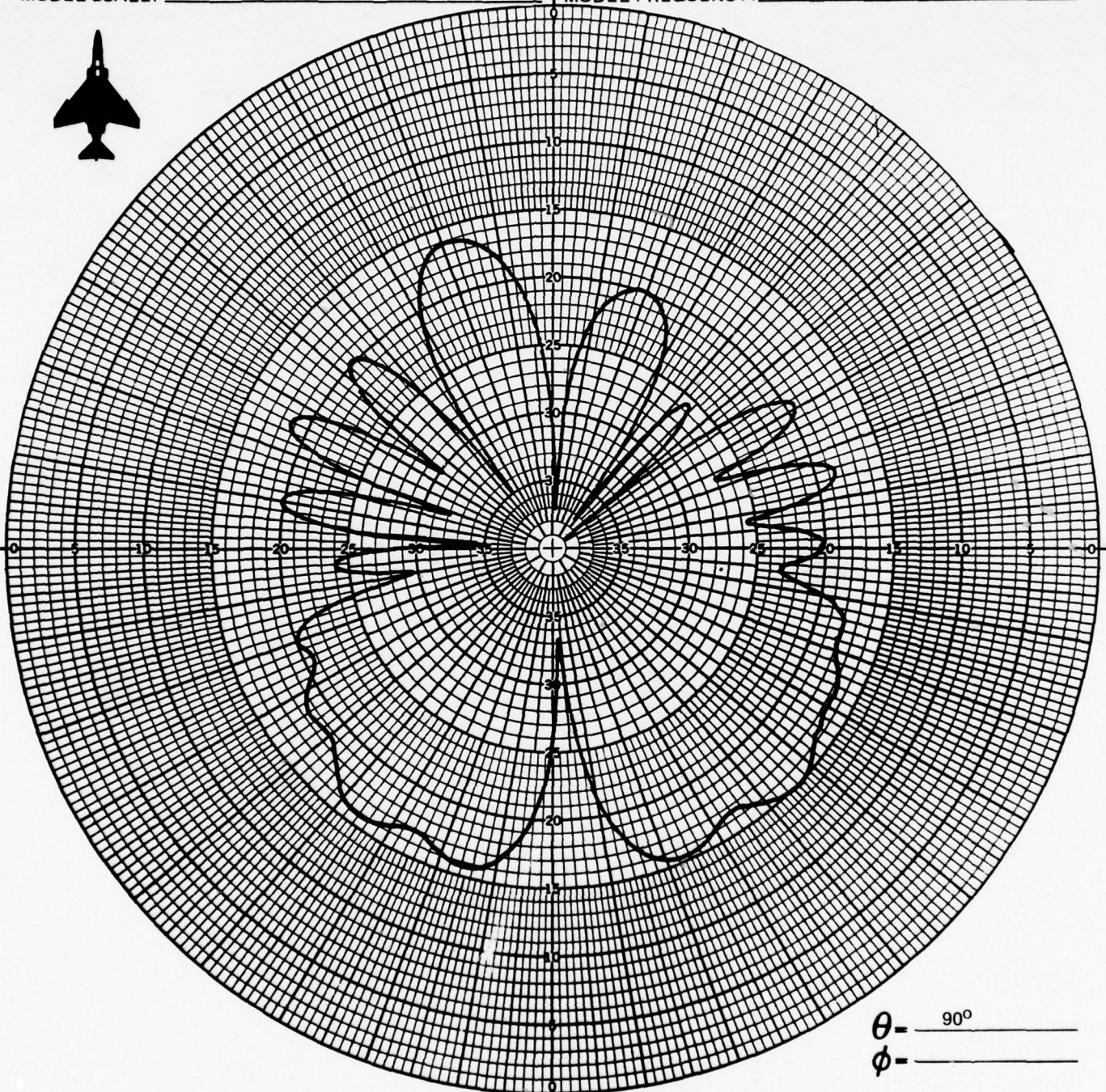
CONFIGURATION: _____ 4
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: E ϕ ☒ E θ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: _____ 3-9-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ NADC
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 76 MHz
MODEL FREQUENCY: _____ 380 MHz



θ - 90°
 ϕ - _____

CONFIGURATION: _____ 4

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: E ☒ E ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

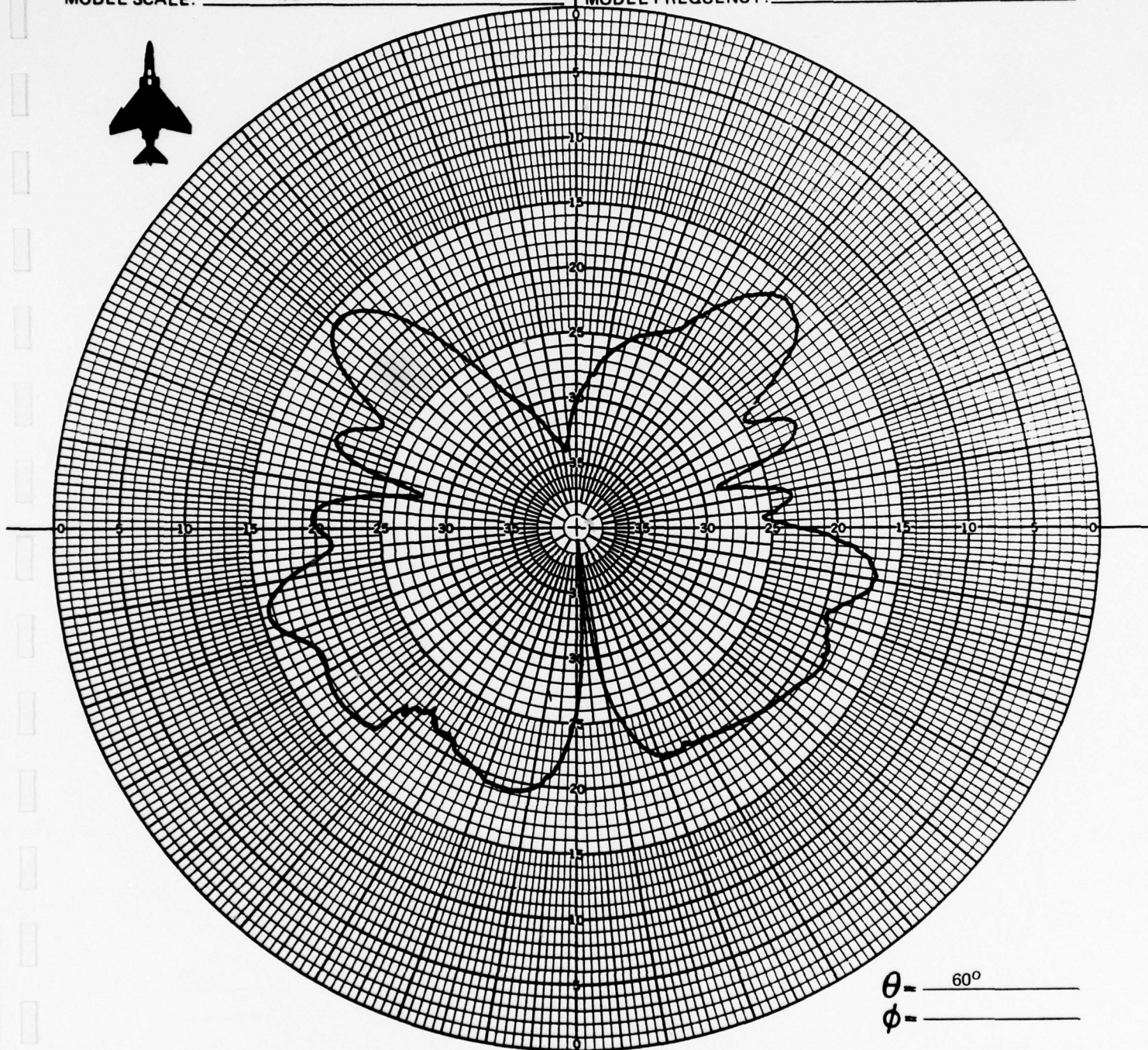
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: 3-9-77

DOCUMENT _____
REVISION _____

ANTENNA: NADC
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 76 MHz
MODEL FREQUENCY: 380 MHz



θ - 60°
 ϕ - _____

CONFIGURATION: 4

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

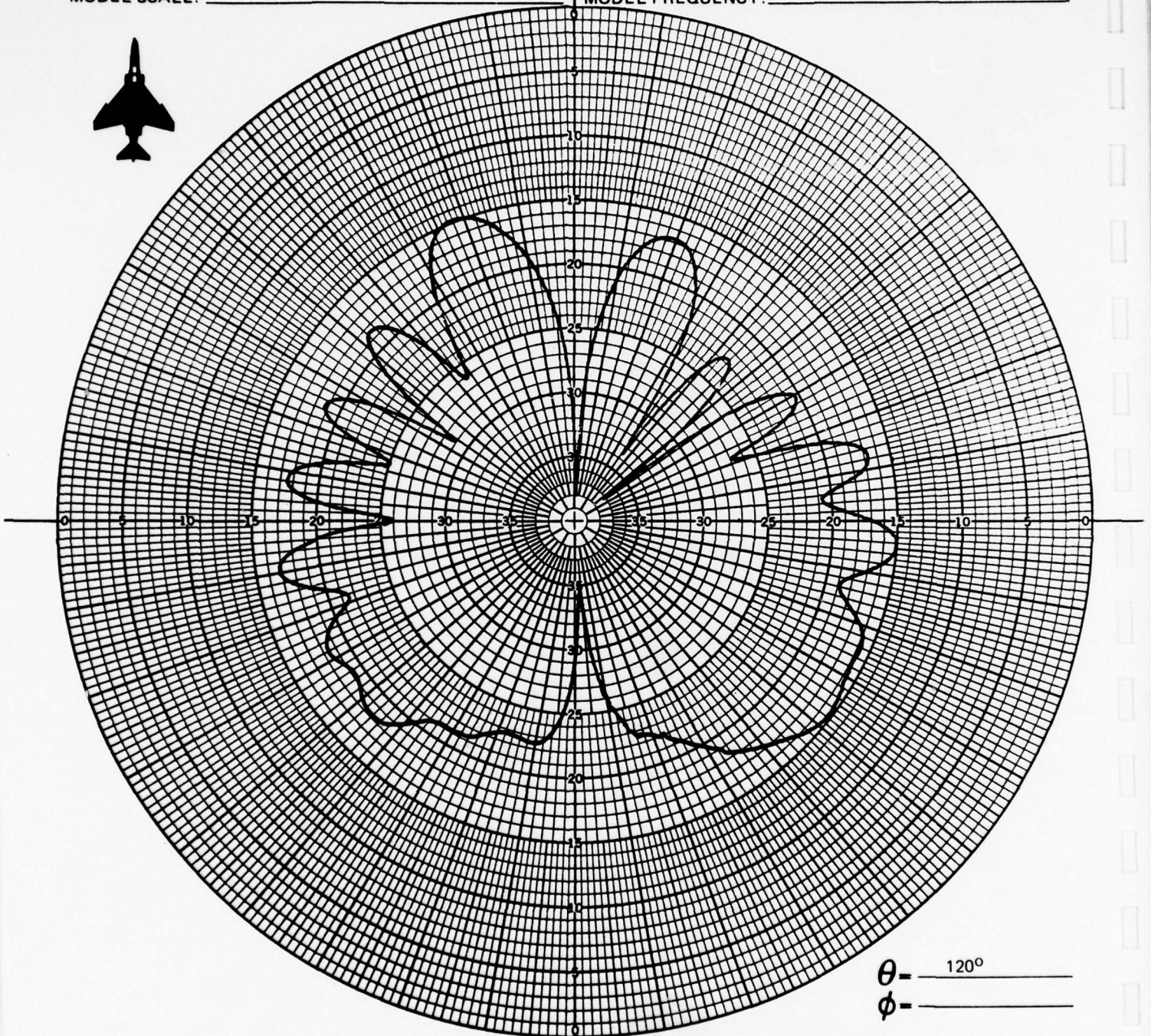
TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 3-9-77

DOCUMENT _____
REVISION _____

ANTENNA: NADC
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 76 MHz
MODEL FREQUENCY: 380 MHz



θ - 120°
 ϕ - _____

CONFIGURATION: 4

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: ☒ E ϕ ☐ E θ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

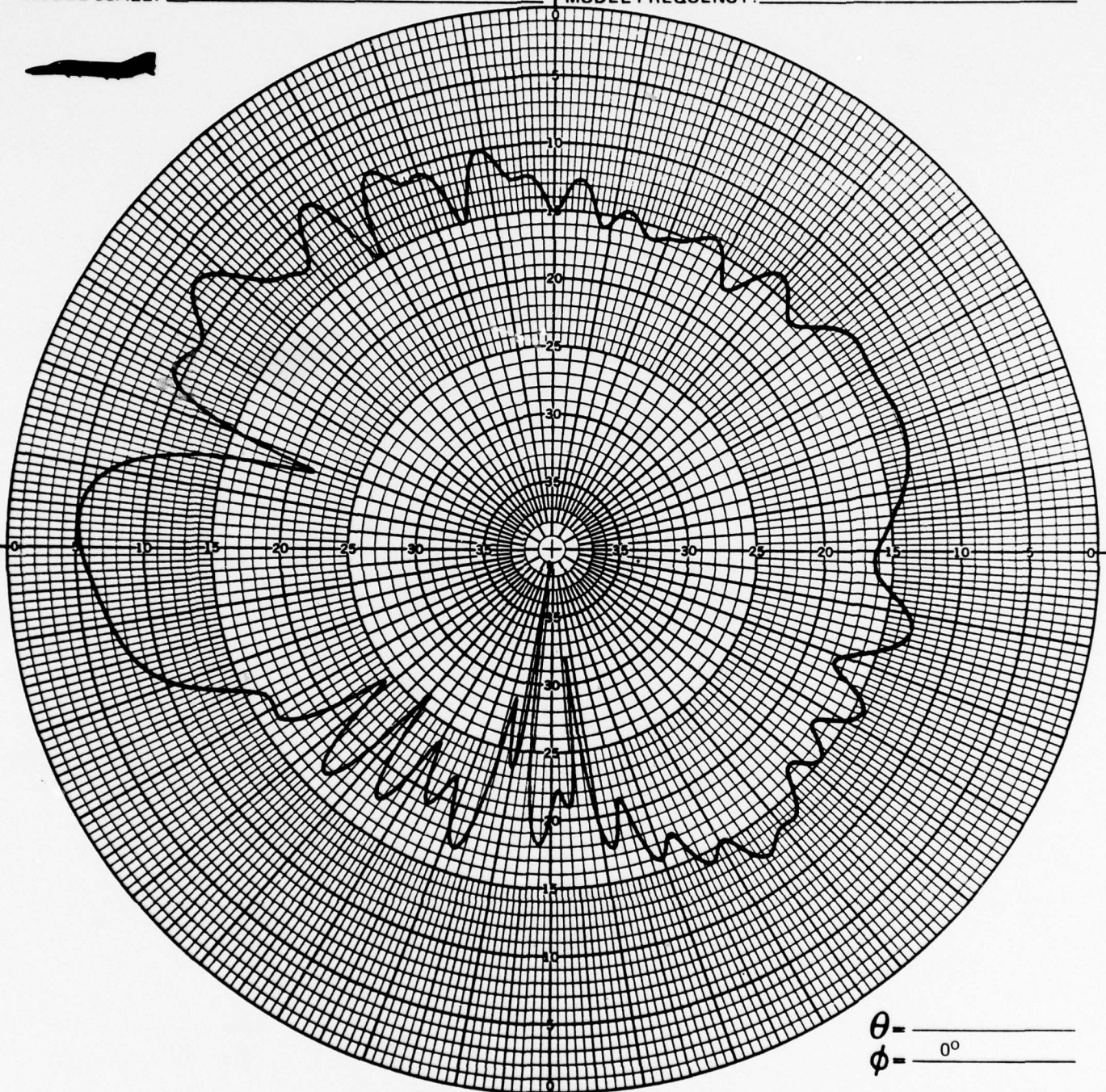
TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 3-9-77

DOCUMENT _____
REVISION _____

ANTENNA: NADC
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 145 MHz
MODEL FREQUENCY: 725 MHz



θ - _____
 ϕ - 0°

CONFIGURATION: 4

INTEGRATOR COUNT: _____

REMARKS: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

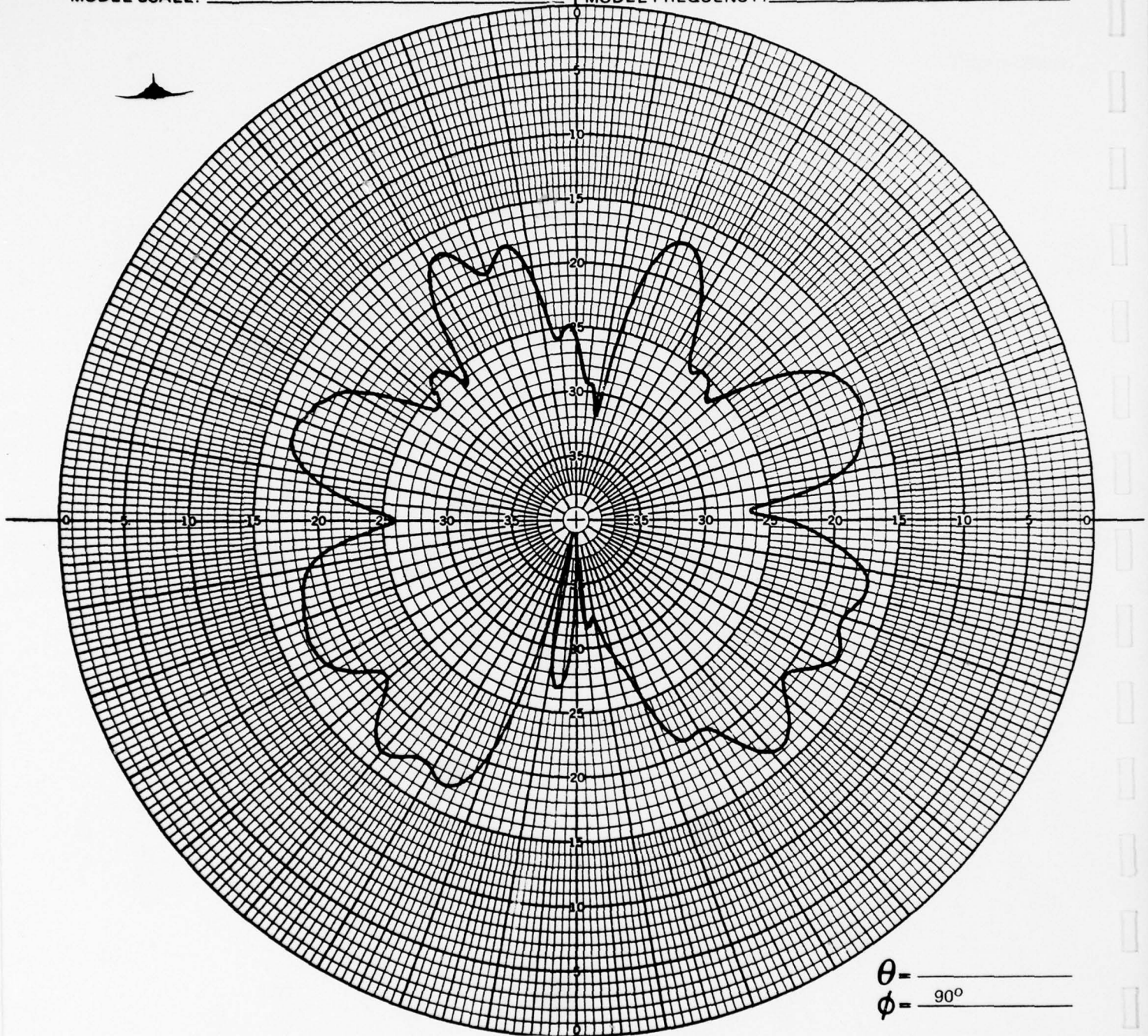
TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 3-9-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ NADC
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 145 MHz
MODEL FREQUENCY: _____ 725 MHz



θ = _____
 ϕ = 90°

CONFIGURATION: _____ 4

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: E ϕ ☐ E θ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

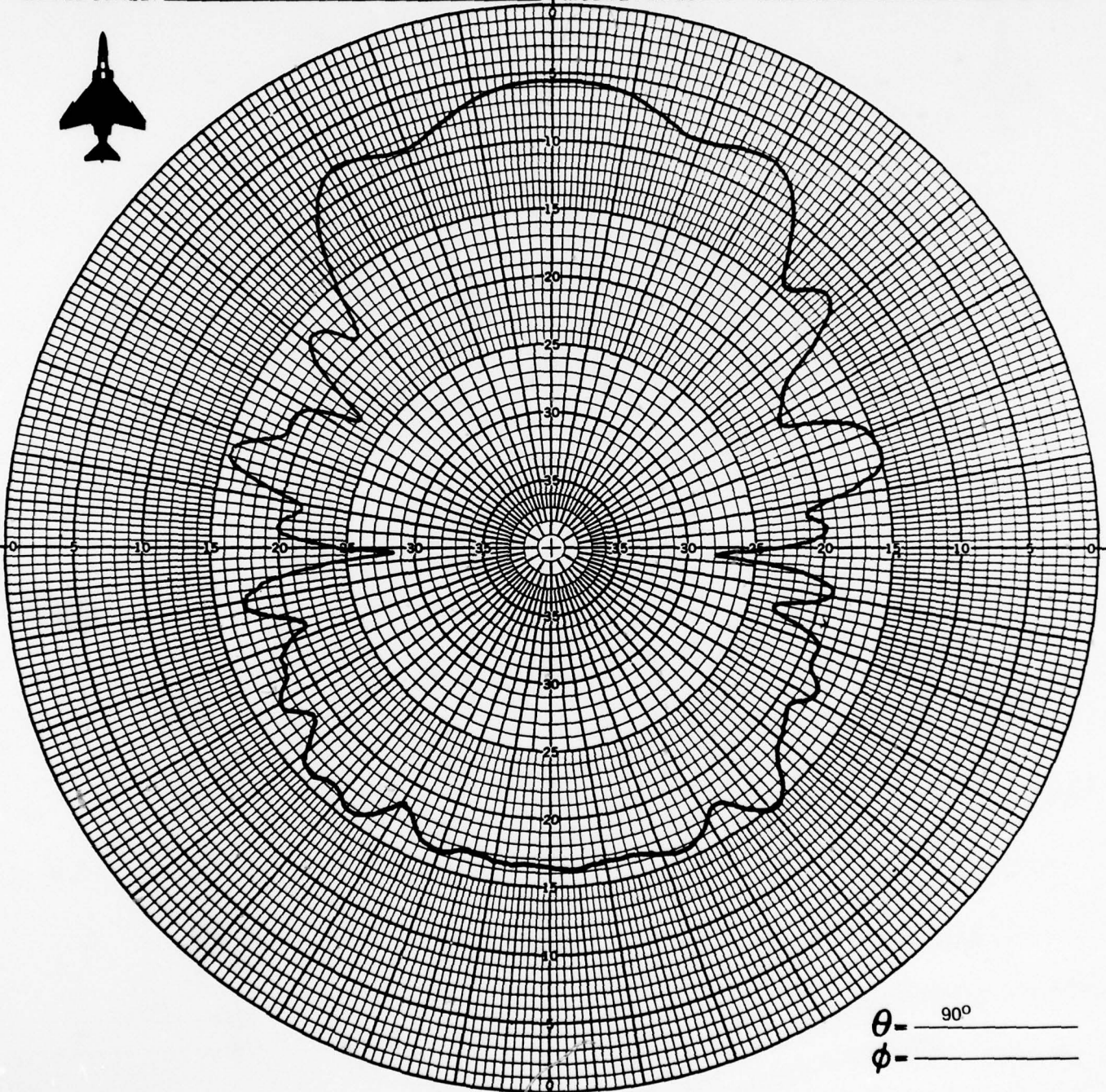
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 3-9-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ NADC
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 145 MHz
MODEL FREQUENCY: _____ 725 MHz



θ - 90°
 ϕ - _____

CONFIGURATION: _____ 4

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

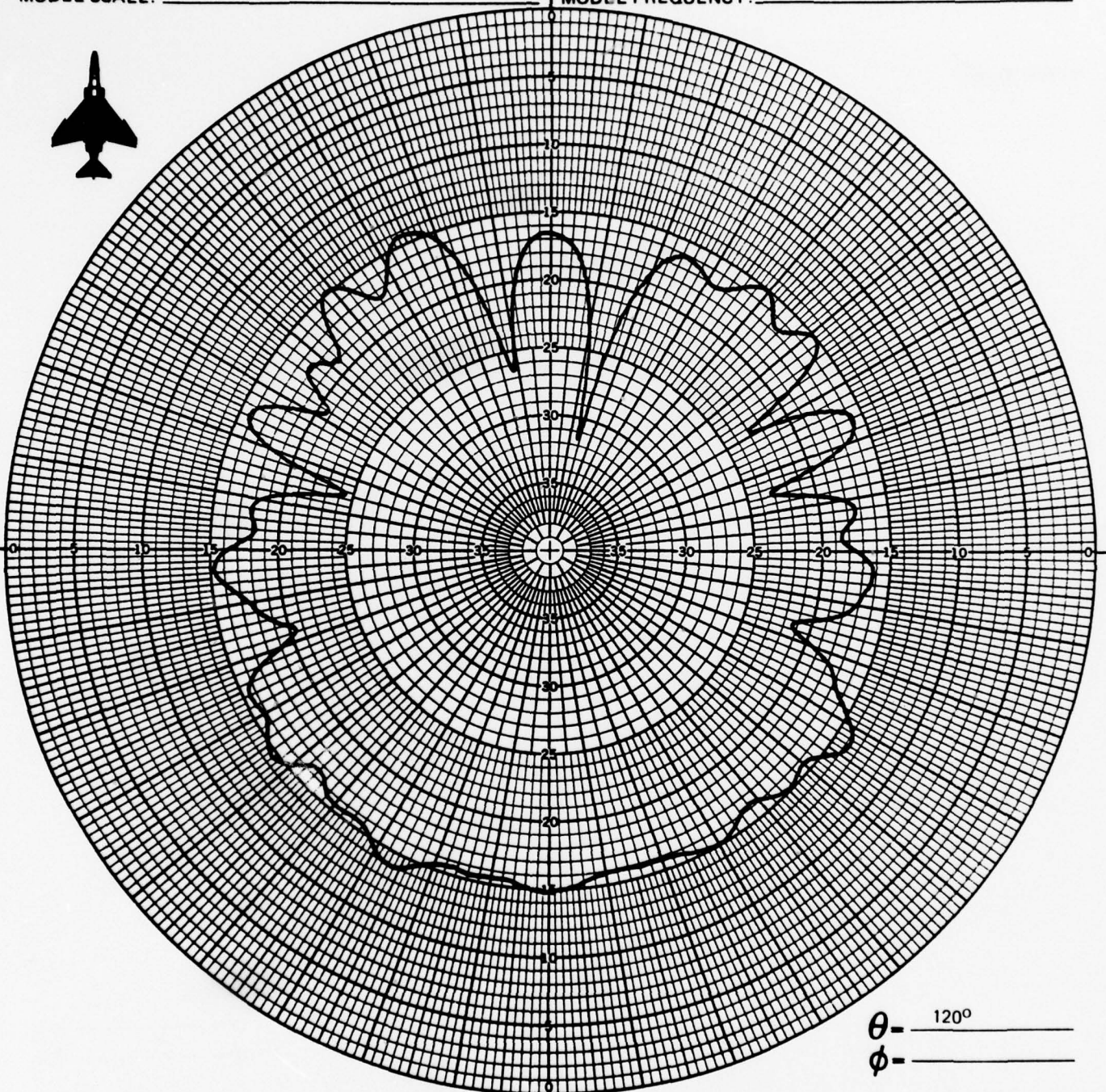
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: 3-9-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ NADC
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 145 MHz
MODEL FREQUENCY: _____ 725 MHz



θ - _____ 120°
 ϕ - _____

CONFIGURATION: _____ 4

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: E ϕ ☐ E θ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

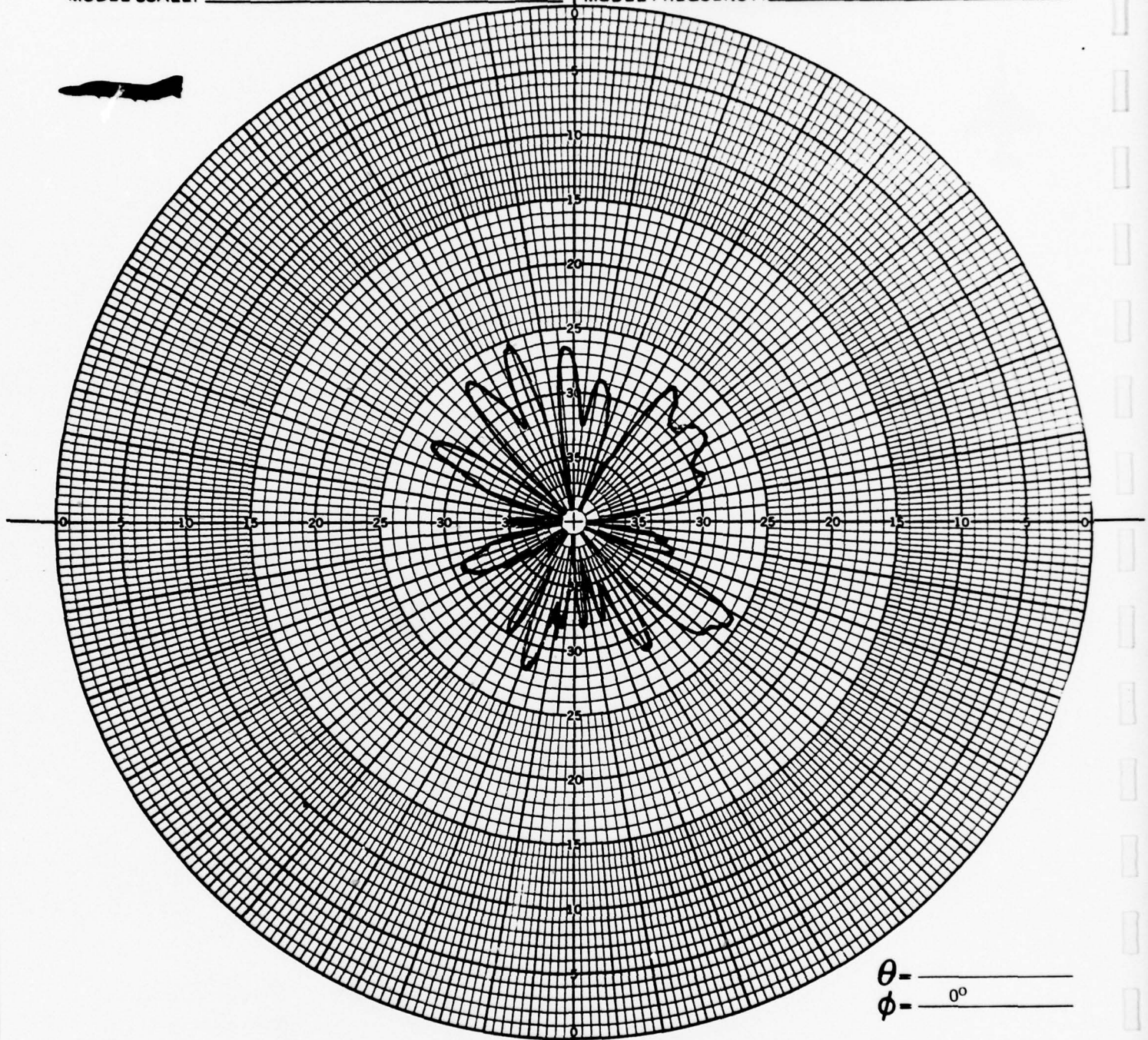
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 3-9-77

DOCUMENT _____
REVISION _____

ANTENNA: NADC
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 145 MHz
MODEL FREQUENCY: 725 MHz



θ - _____
 ϕ - 0°

CONFIGURATION: 4

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

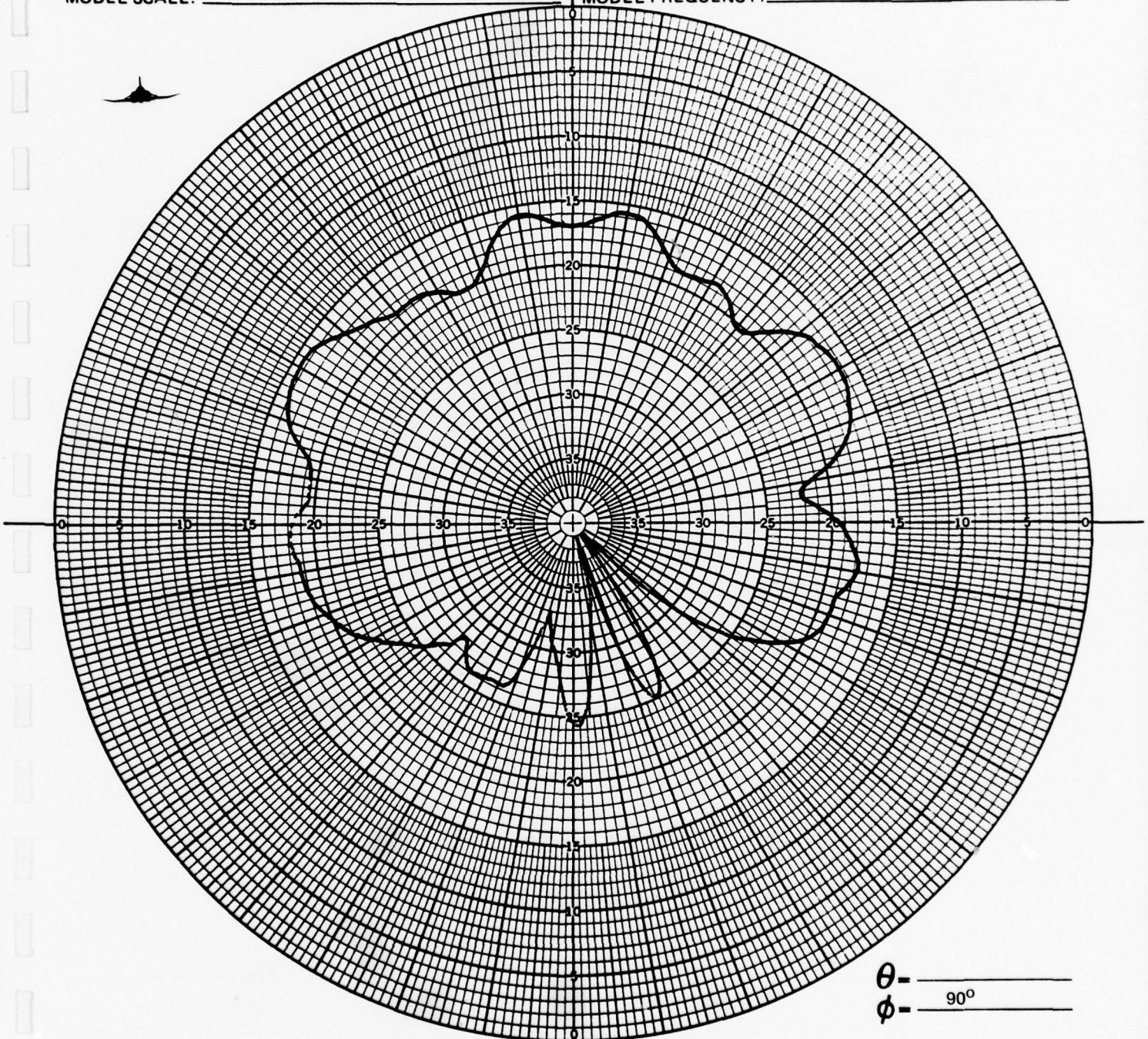
TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 3-9-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ NADC
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 145 MHz
MODEL FREQUENCY: _____ 725 MHz

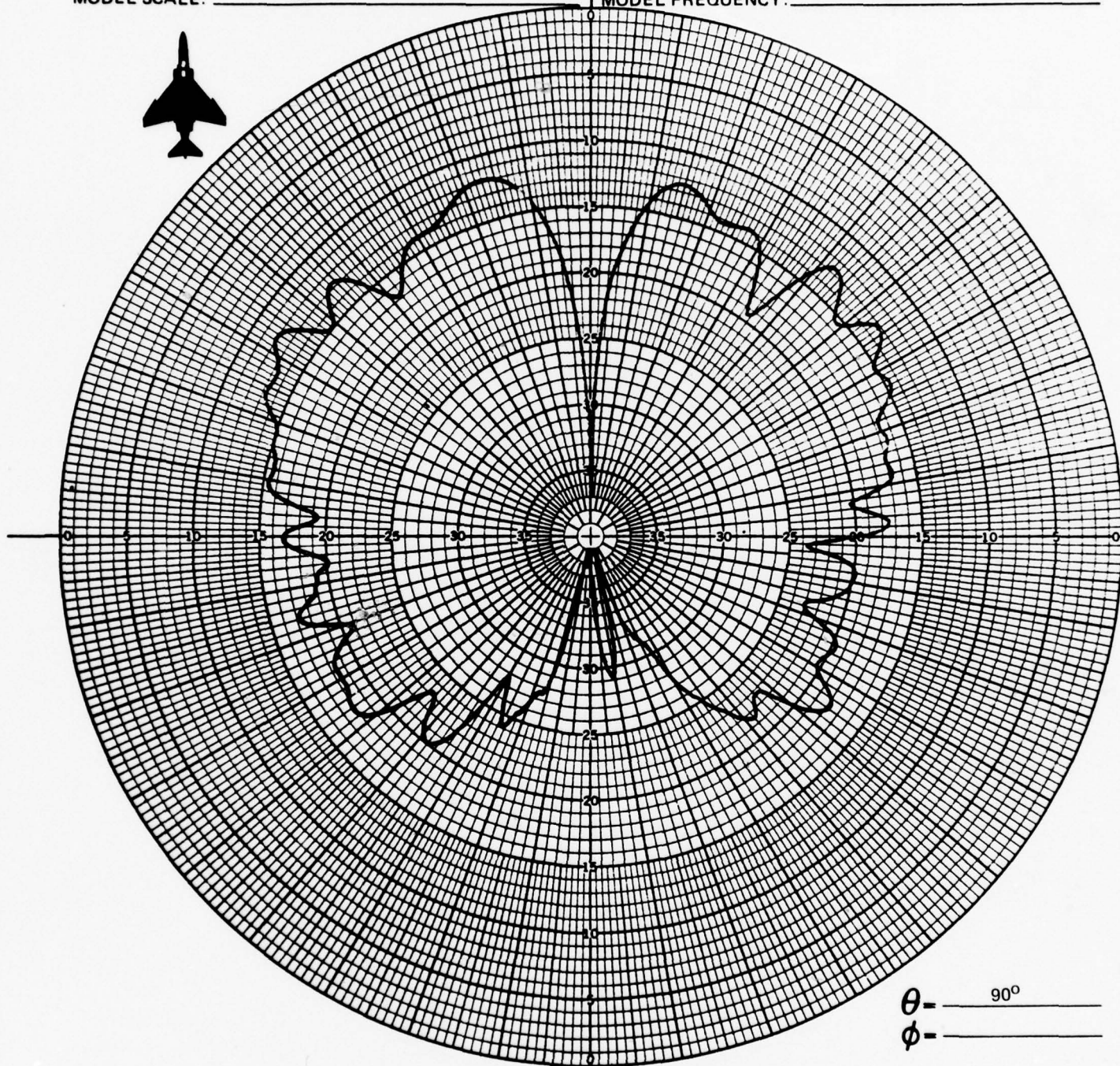


CONFIGURATION: _____ 4
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: 3-9-77

ANTENNA: NADC
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

DOCUMENT _____
REVISION _____
TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 145 MHz
MODEL FREQUENCY: 725 MHz



CONFIGURATION: 4
REMARKS _____

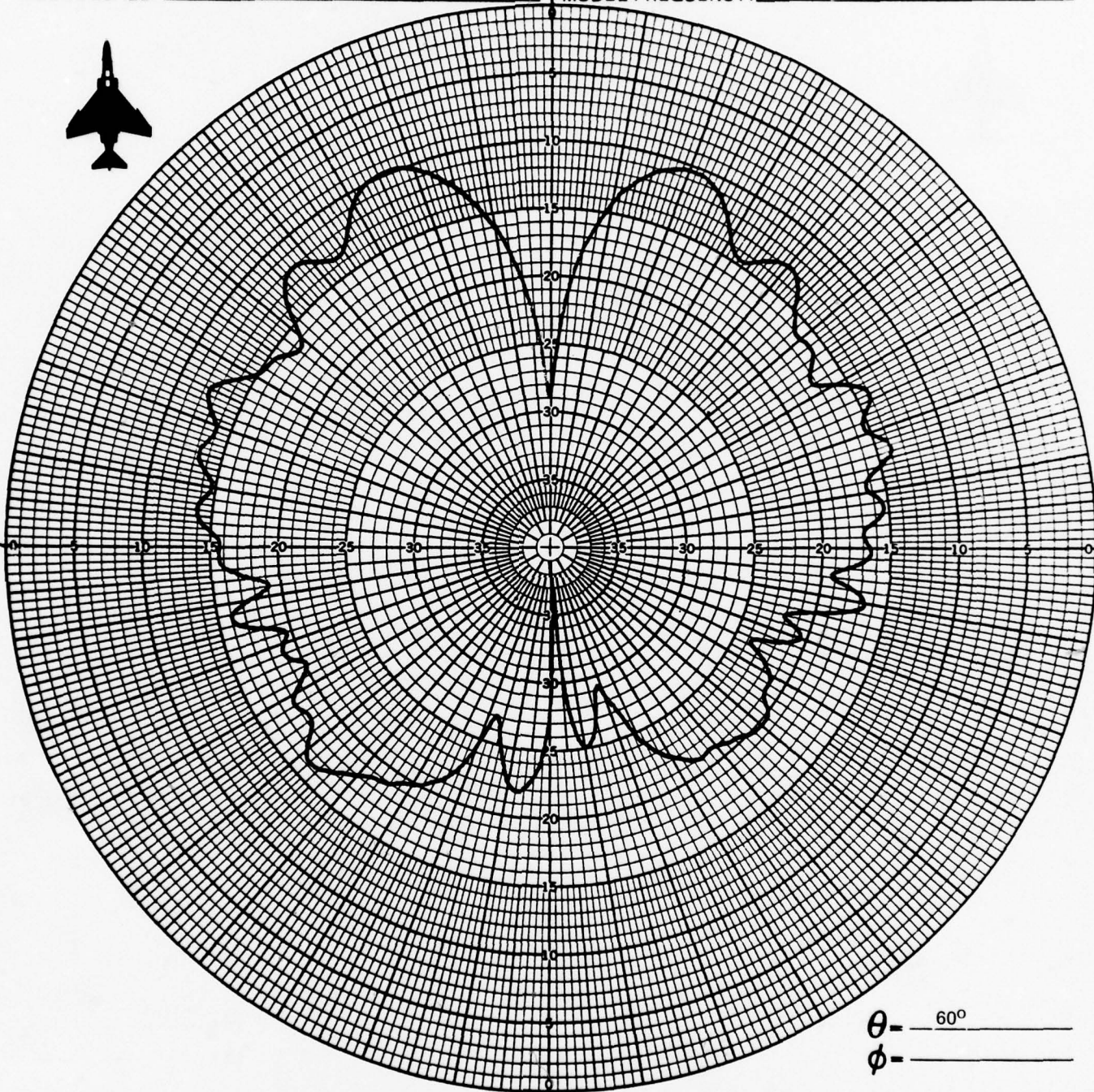
INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: 285 FT
OBSERVER: PN, BM DATE: 3-9-77

θ = 90°
 ϕ = _____

DOCUMENT _____
REVISION _____

ANTENNA: NADC
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 145 MHz
MODEL FREQUENCY: 725 MHz



θ - 60°
 ϕ - _____

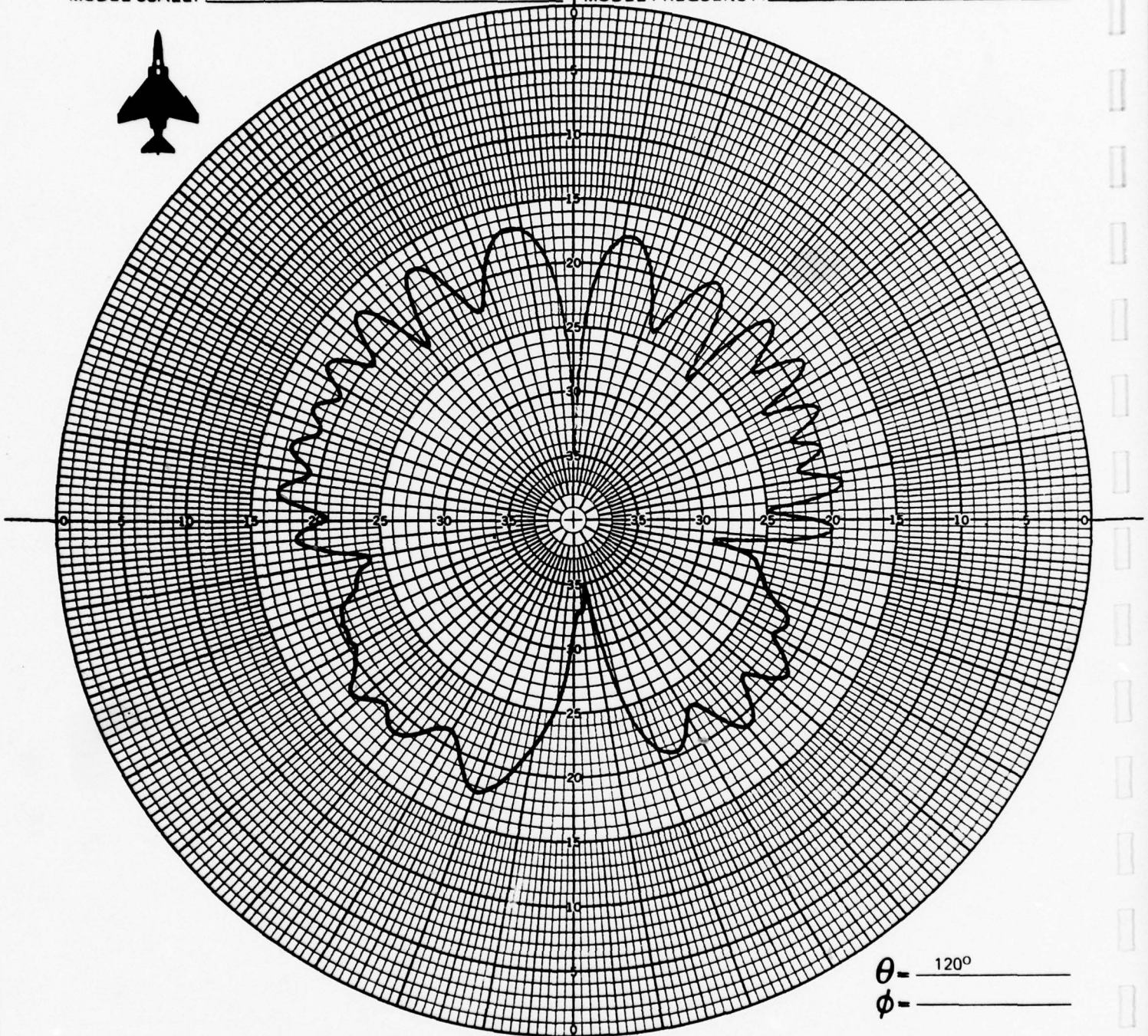
CONFIGURATION: 4
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: E ϕ ☒ E θ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: 285 FT
OBSERVER: PN, BM DATE: 3-9-77

DOCUMENT _____
REVISION _____

ANTENNA: NADC
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 145 MHz
MODEL FREQUENCY: 725 MHz



θ - 120°
 ϕ - _____

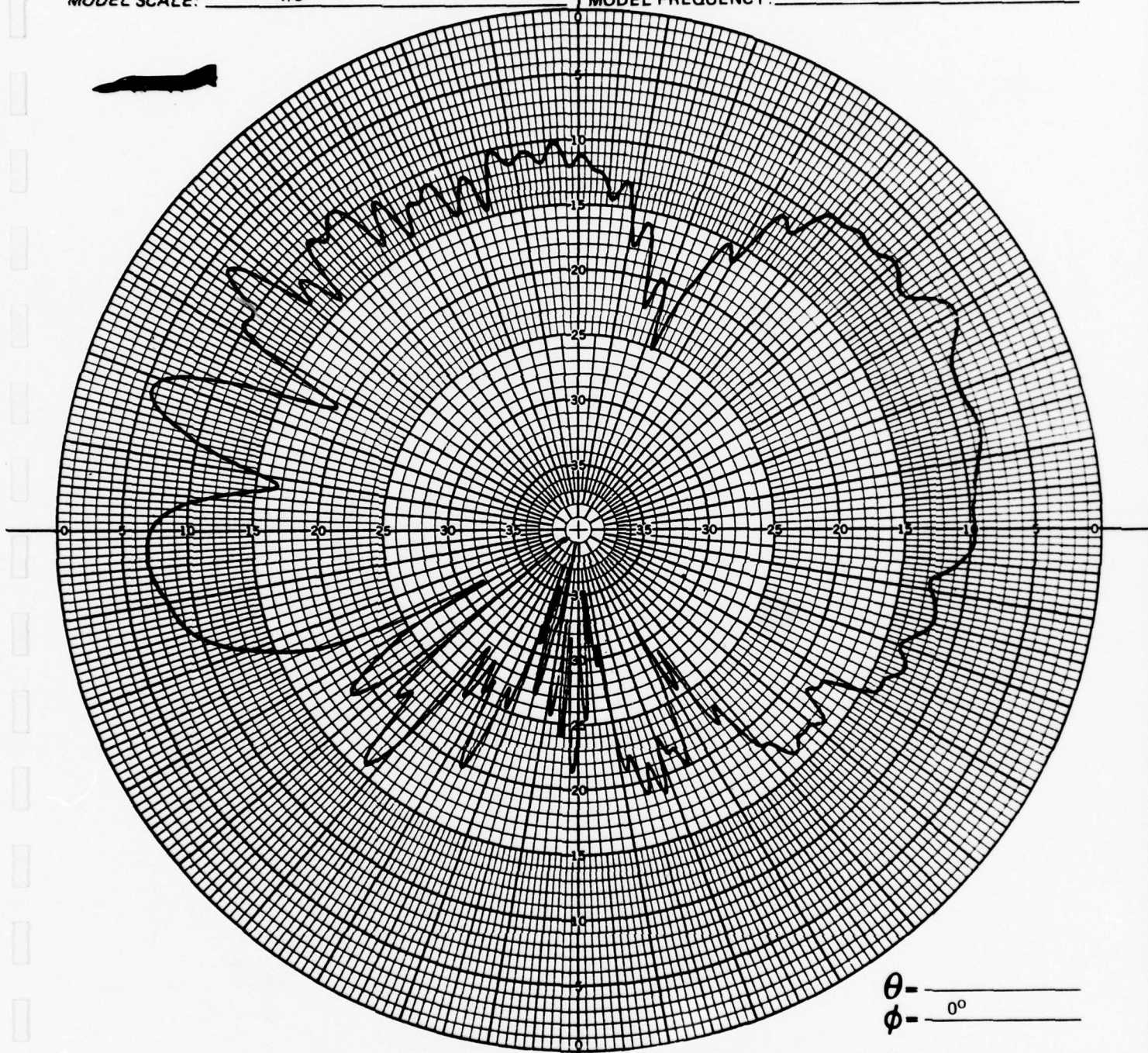
CONFIGURATION: 4
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: 285 FT
OBSERVER: PN, BM DATE: 3-9-77

DOCUMENT _____
REVISION _____

ANTENNA: NADC
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 325 MHz
MODEL FREQUENCY: 1625 MHz



θ - _____
 ϕ - 0°

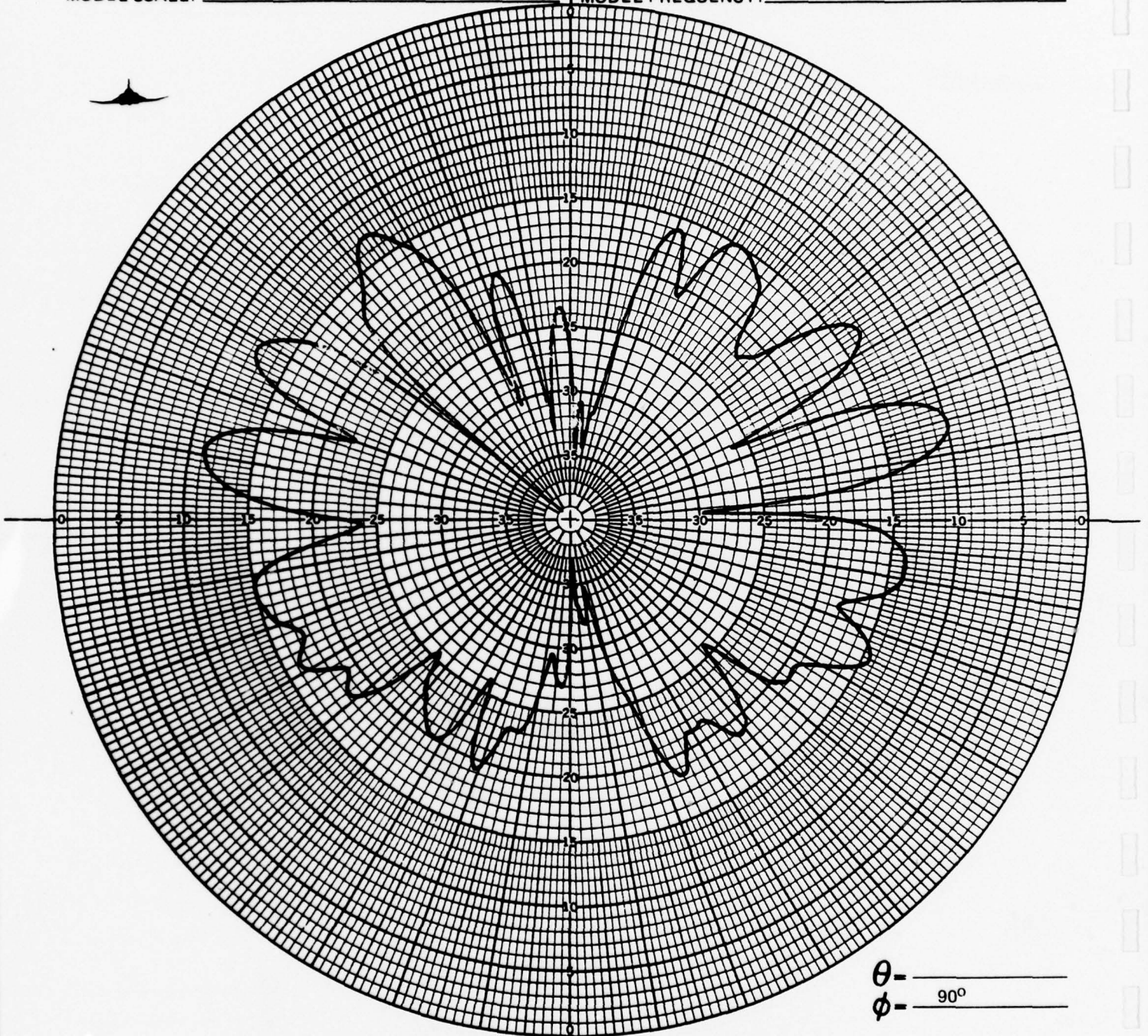
CONFIGURATION: 4
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: 285 FT
OBSERVER: PN, BM DATE: 3-9-77

DOCUMENT _____
REVISION _____

ANTENNA: NADC
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 325 MHz
MODEL FREQUENCY: 1625 MHz



θ - _____
 ϕ - 90°

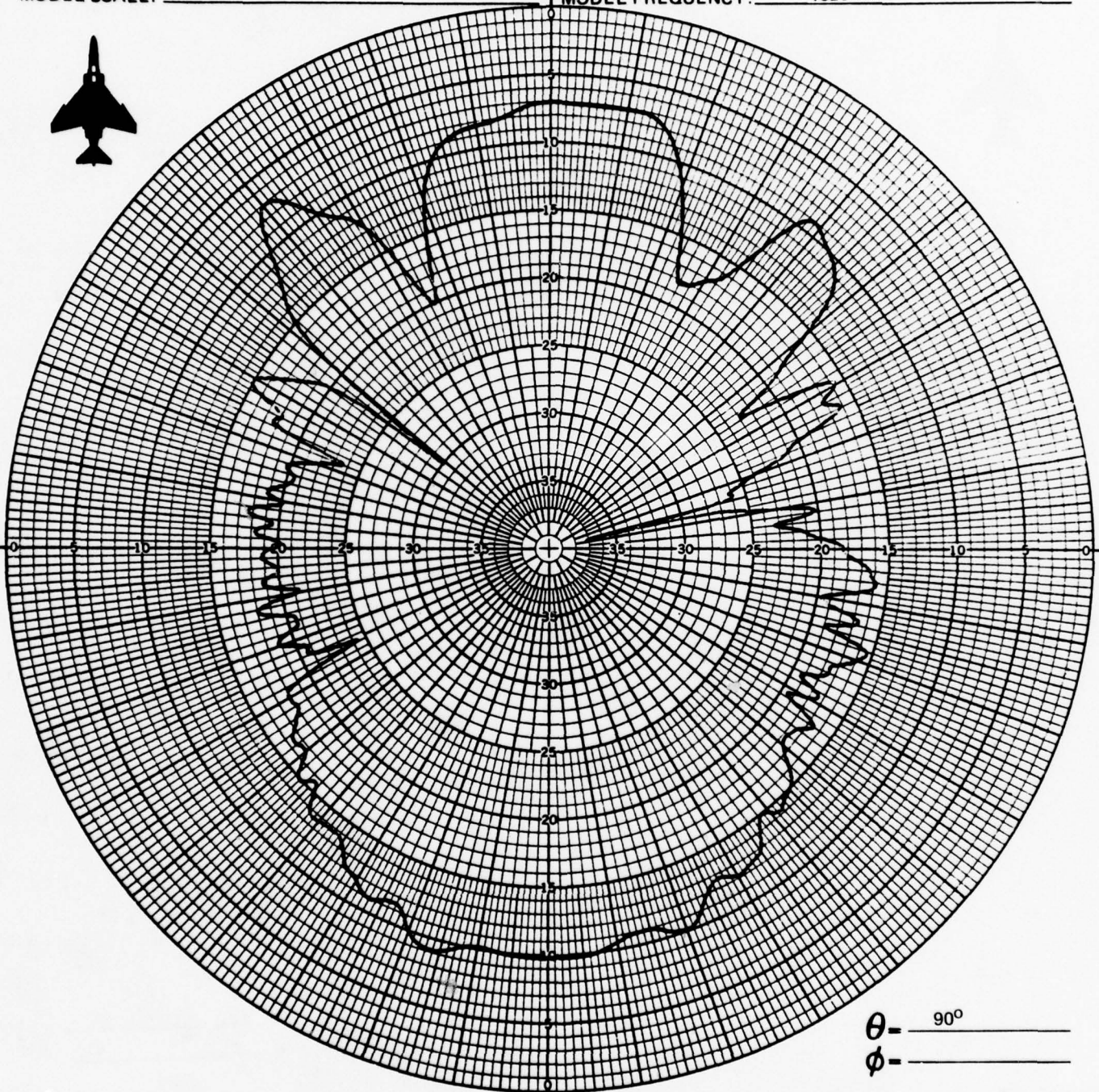
CONFIGURATION: 4
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: 285 FT
OBSERVER: PN, BM DATE: 3-9-77

DOCUMENT _____
REVISION _____

ANTENNA: NADC
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 325 MHz
MODEL FREQUENCY: 1625 MHz



θ - 90°
 ϕ - _____

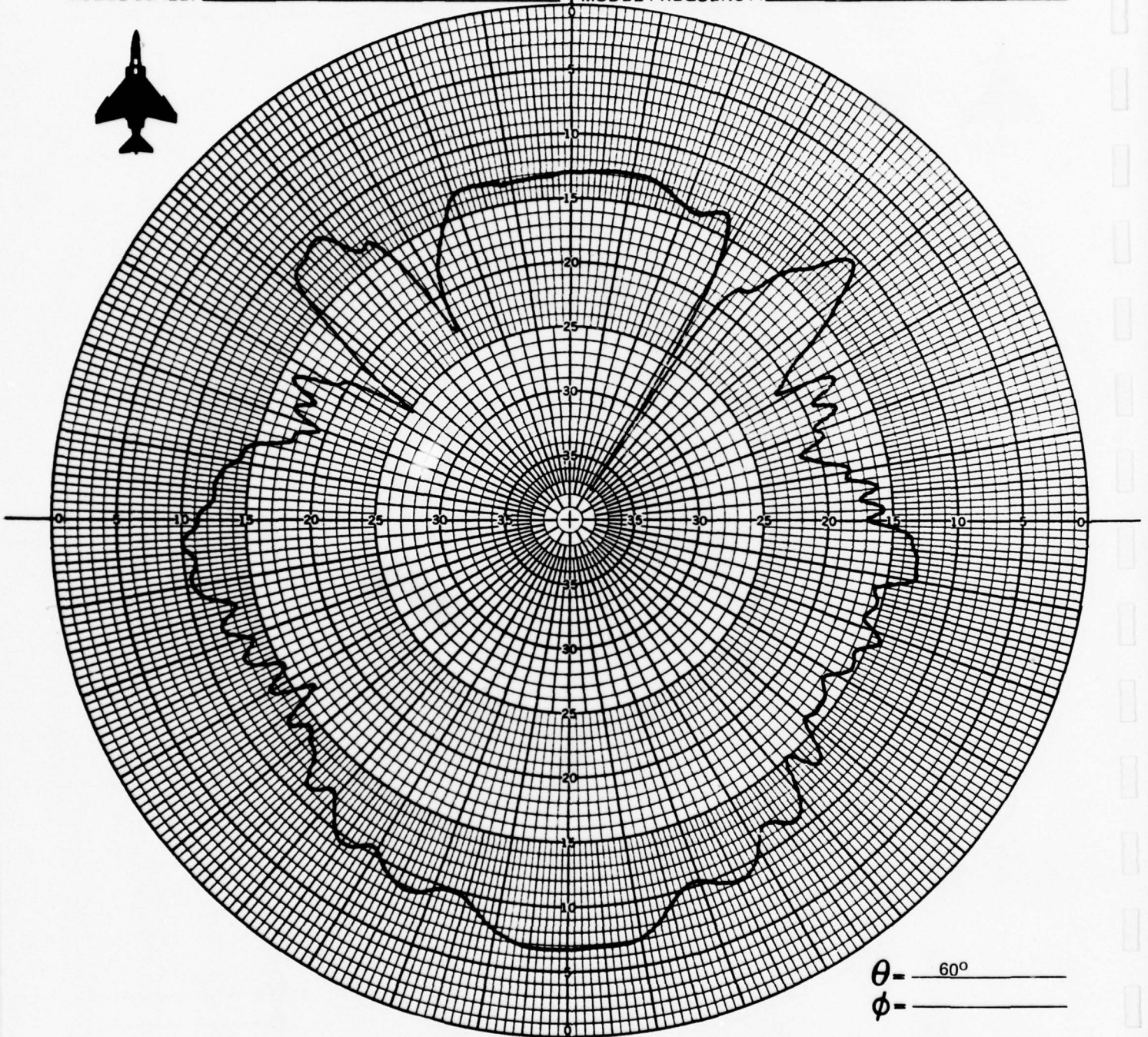
CONFIGURATION: 4
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: 285 FT
OBSERVER: PN, BM DATE: 3-9-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ NADC
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 325 MHz
MODEL FREQUENCY: _____ 1625 MHz



θ - 60°
 ϕ - _____

CONFIGURATION: _____ 4

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: E ϕ ☐ E θ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

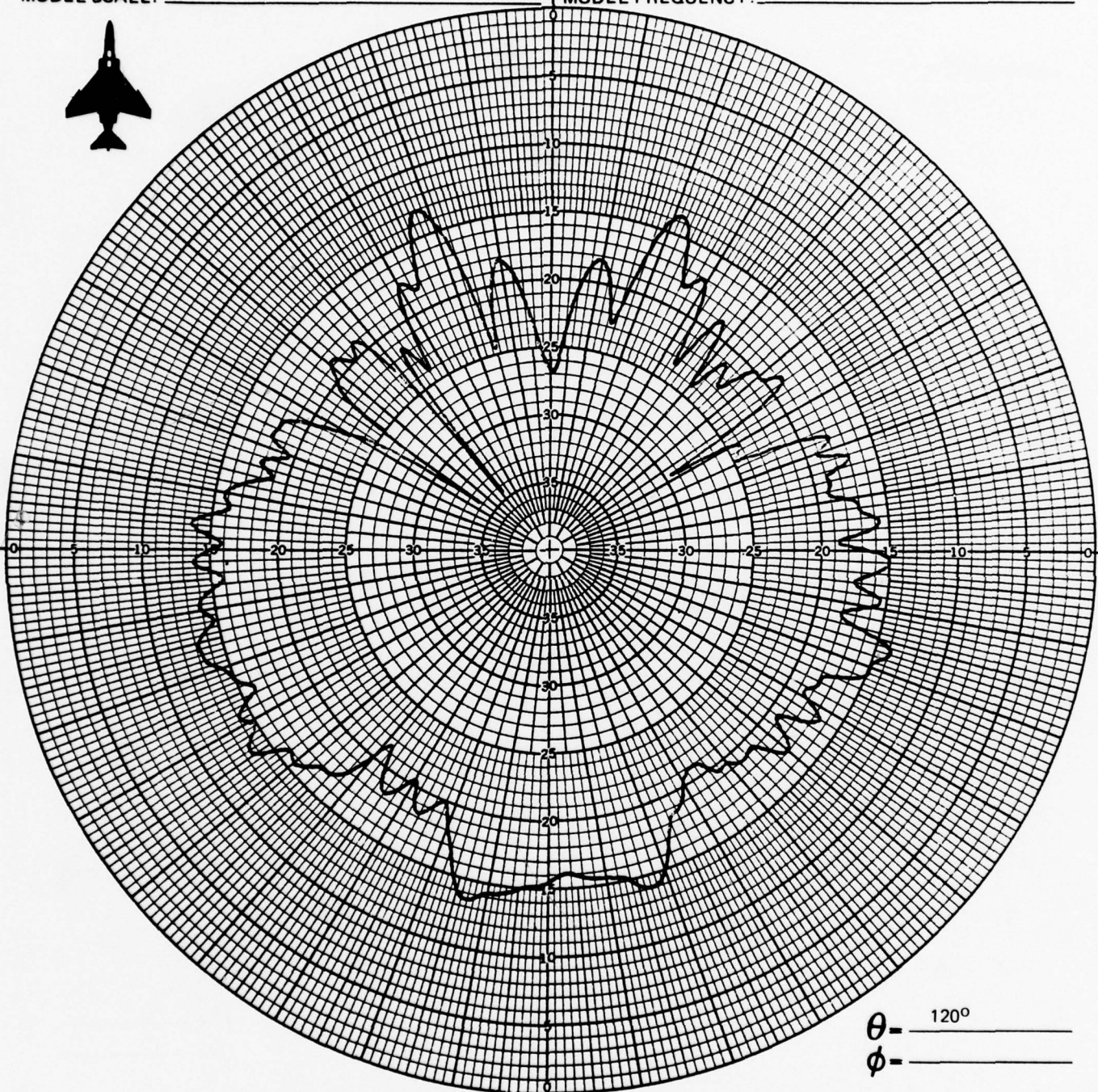
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 3-9-77

DOCUMENT _____
REVISION _____

ANTENNA: NADC
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 325 MHz
MODEL FREQUENCY: 1625 MHz



θ - 120°
 ϕ - _____

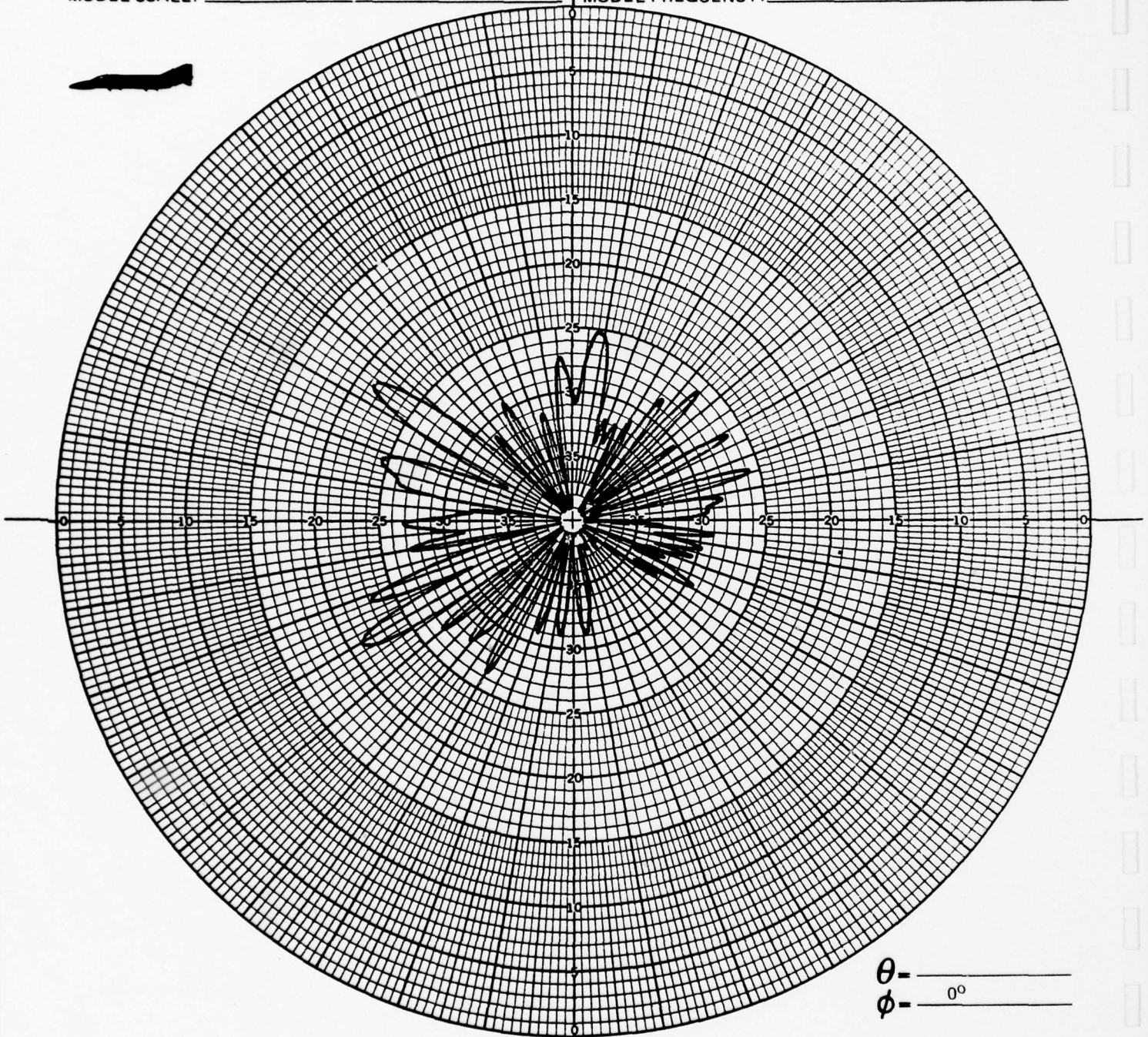
CONFIGURATION: 4
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: 285 FT
OBSERVER: PN, BM DATE: 3-9-77

DOCUMENT _____
REVISION _____

ANTENNA: NADC
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 325 MHz
MODEL FREQUENCY: 1625 MHz



θ - _____
 ϕ - 0°

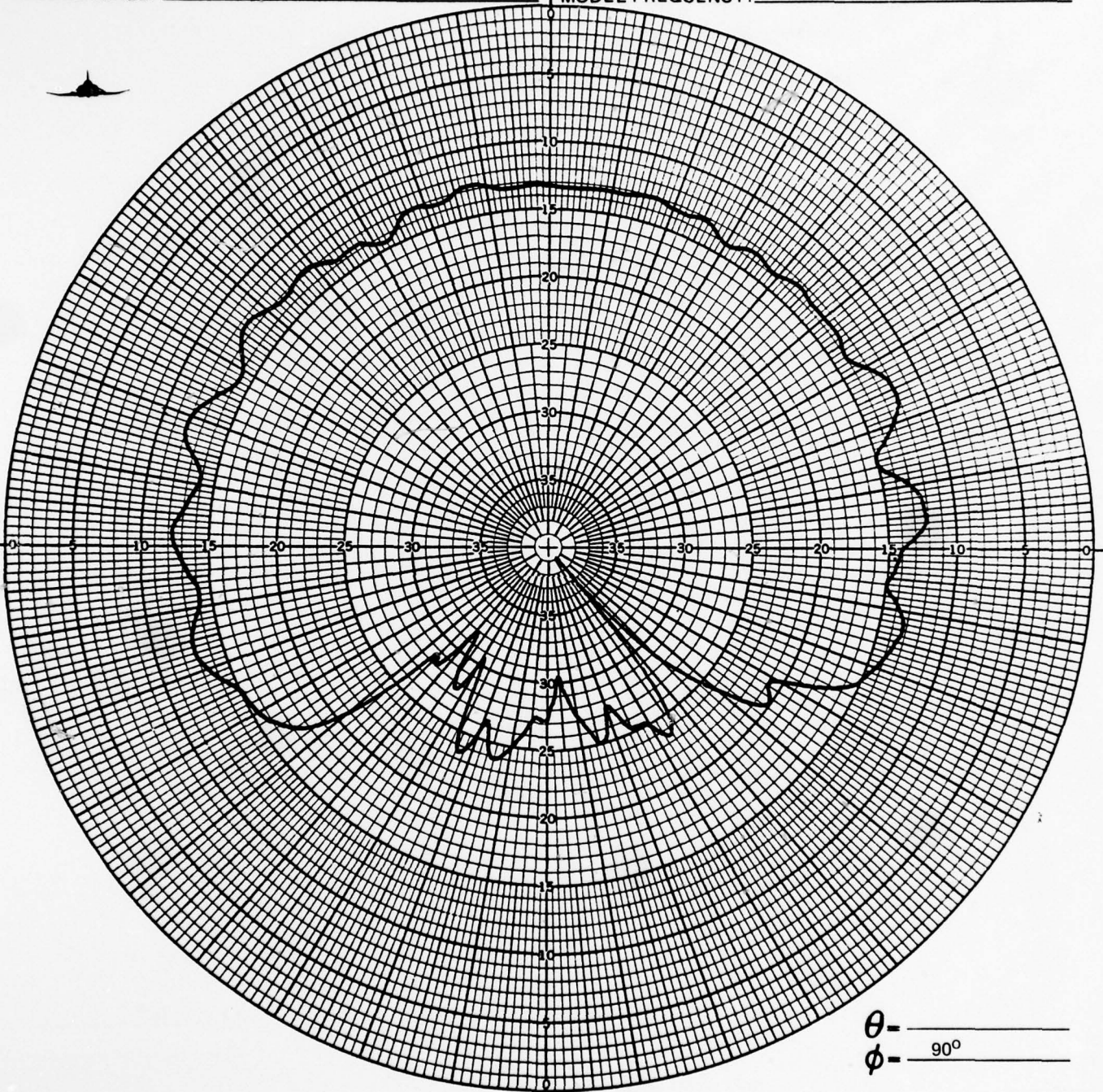
CONFIGURATION: 4
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: 285 FT
OBSERVER: PN, BM DATE: 3-9-77

DOCUMENT _____
REVISION _____

ANTENNA: NADC
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 325 MHz
MODEL FREQUENCY: 1625 MHz



θ - _____
 ϕ - 90°

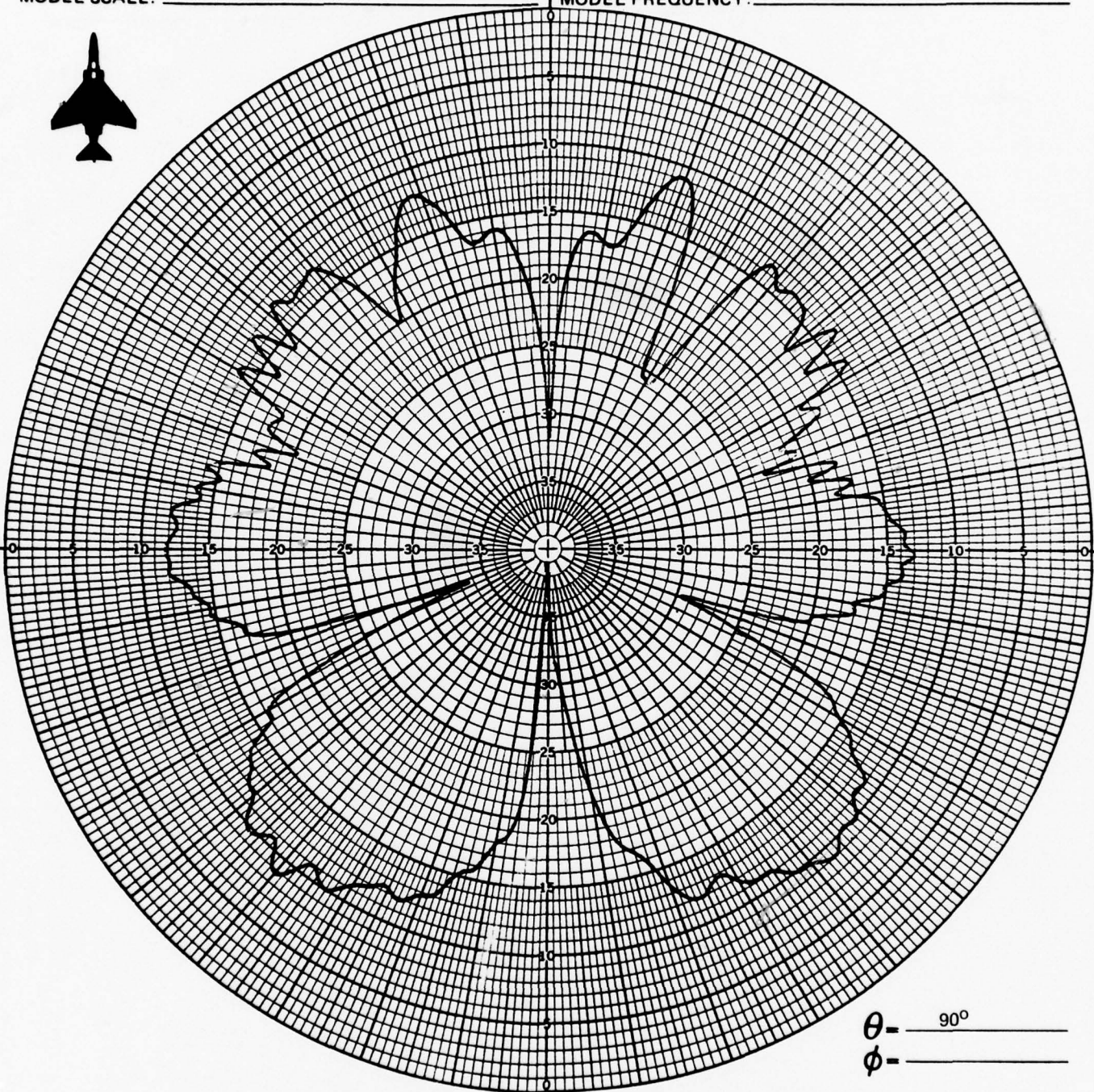
CONFIGURATION: 4
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: E ϕ ☒ E θ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: 285 FT
OBSERVER: PN, BM DATE: 3-9-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ NADC
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 325 MHz
MODEL FREQUENCY: _____ 1625 MHz



θ - _____ 90°
 ϕ - _____

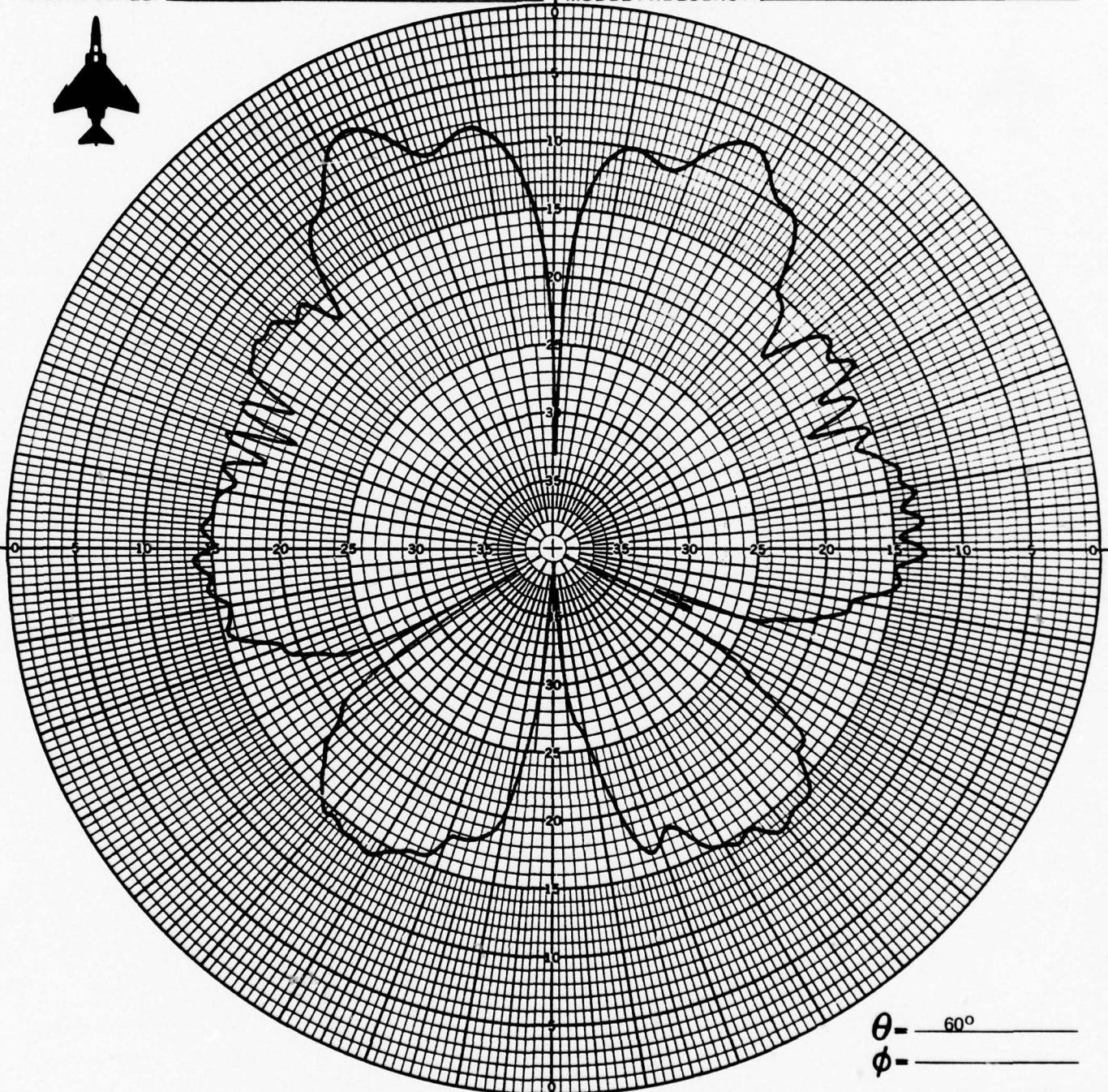
CONFIGURATION: _____ 4
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: E ☒ ϕ ☒ E θ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM _____ DATE: _____ 3-9-77

DOCUMENT _____
REVISION _____

ANTENNA: NADC
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 325 MHz
MODEL FREQUENCY: 1625 MHz



θ - 60°
 ϕ - _____

CONFIGURATION: 4

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

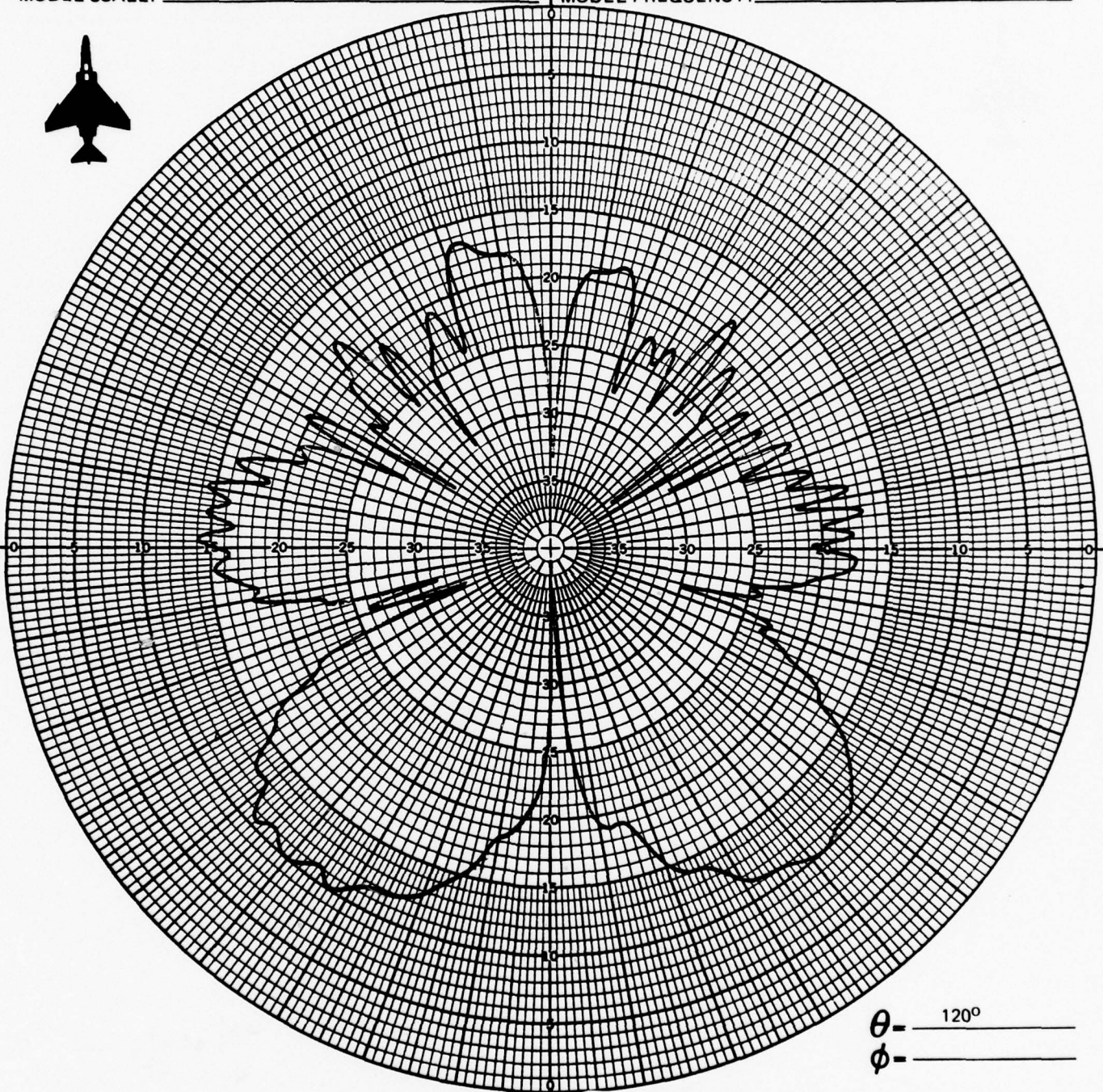
TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 3-9-77

DOCUMENT _____
REVISION _____

ANTENNA: NADC
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 325 MHz
MODEL FREQUENCY: 1625 MHz



θ - 120°
 ϕ - _____

CONFIGURATION: 4

INTEGRATOR COUNT: _____

REMARKS: _____

POLARIZATION: ☐ $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 3-9-77

DOCUMENT _____
REVISION _____

ANTENNA: MODIFIED NADC W/CAP (MED)

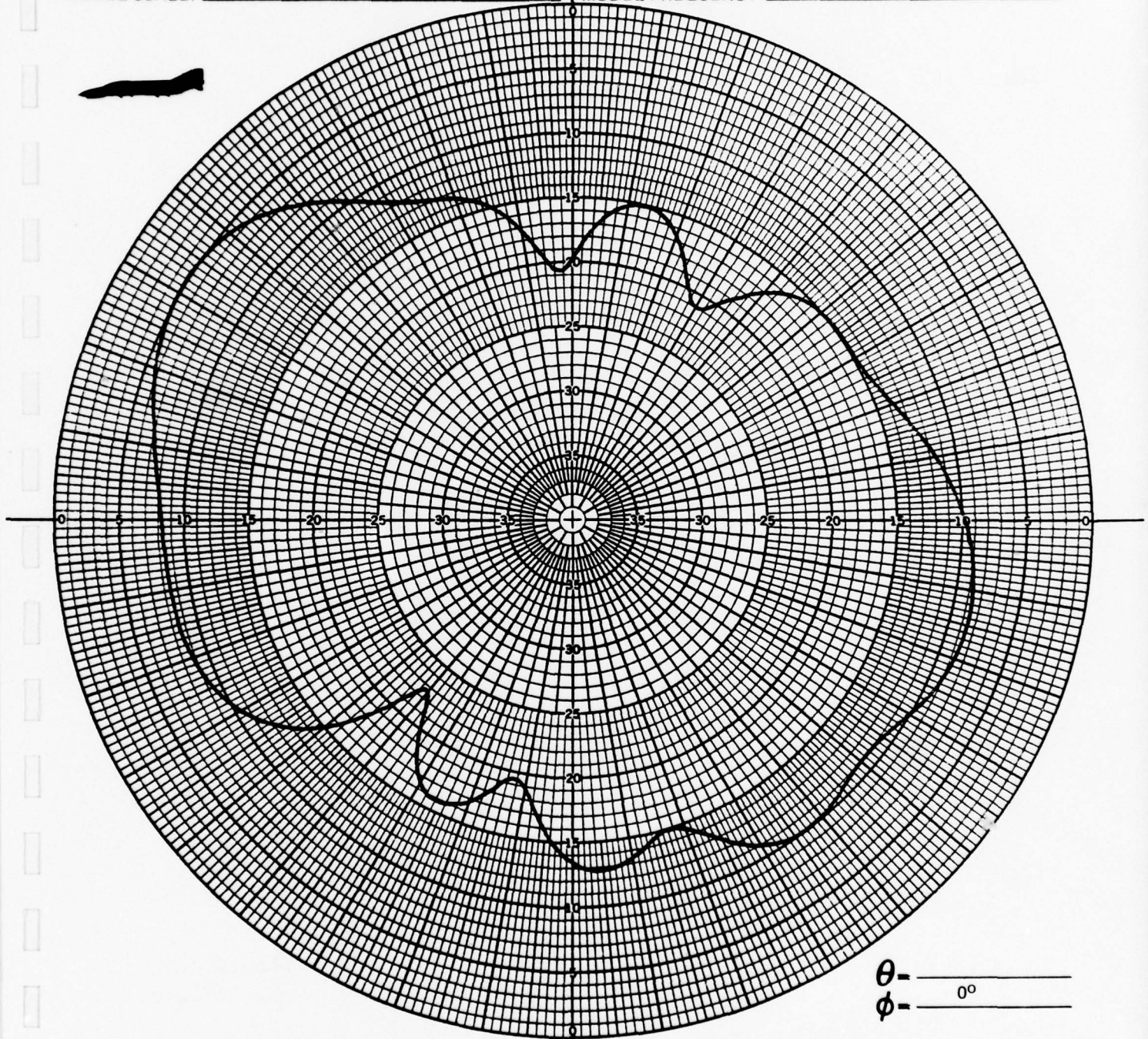
ANTENNA LOCATION: FINCAP

MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)

FULL SCALE FREQUENCY: 33 MHz

MODEL FREQUENCY: 165 MHz



θ = _____
 ϕ = 0°

CONFIGURATION: 24

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 3-25-77

DOCUMENT _____
REVISION _____

ANTENNA: MODIFIED NADC W/CAP (MED)

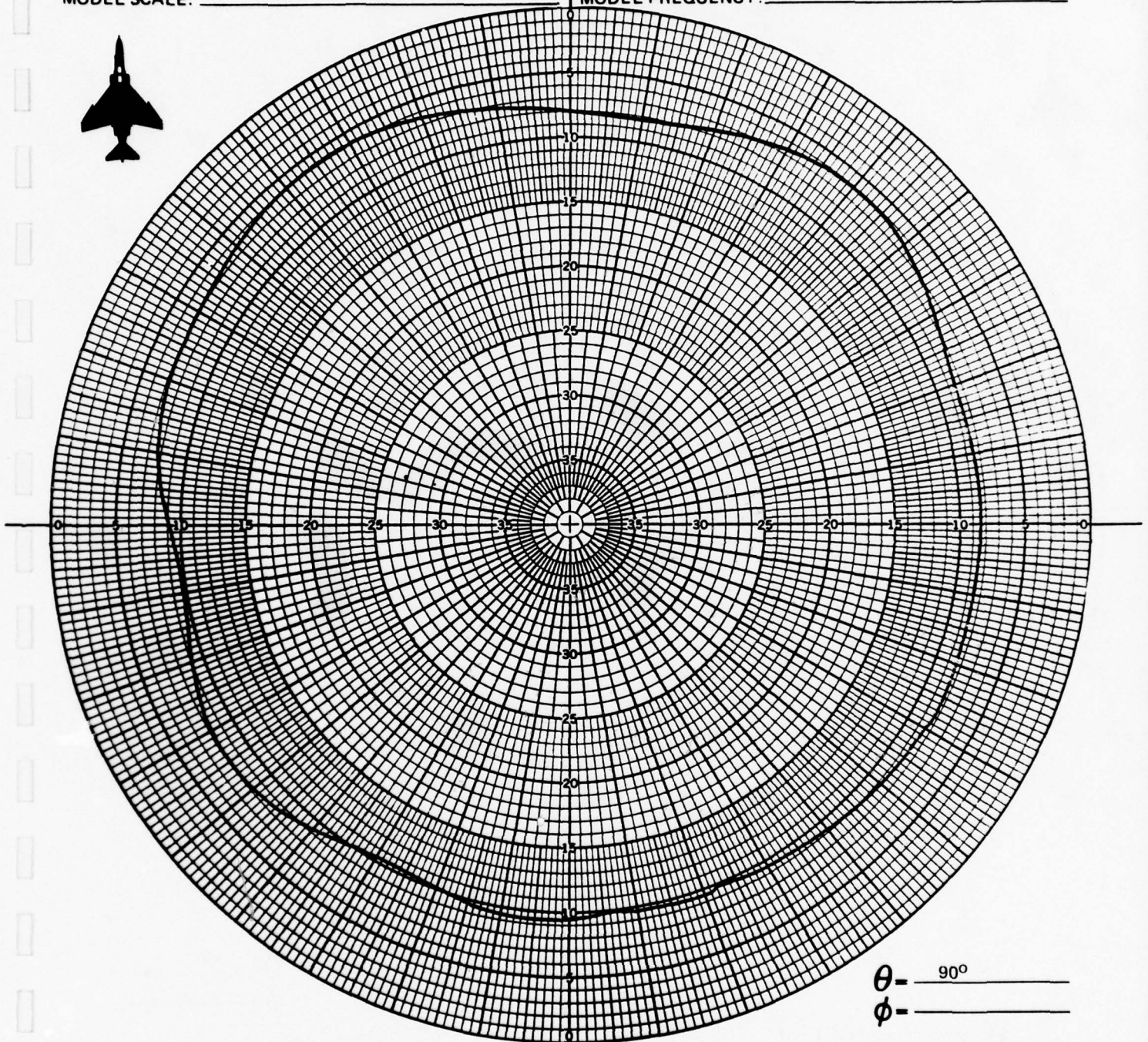
ANTENNA LOCATION: FINCAP

MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)

FULL SCALE FREQUENCY: 33 MHz

MODEL FREQUENCY: 165 MHz



θ - 90°
 ϕ - _____

CONFIGURATION: 24

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: ☒ $E\phi$ ☐ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM

DATE: 3-25-77

DOCUMENT _____
REVISION _____

ANTENNA: MODIFIED NADC W/CAP (MED)

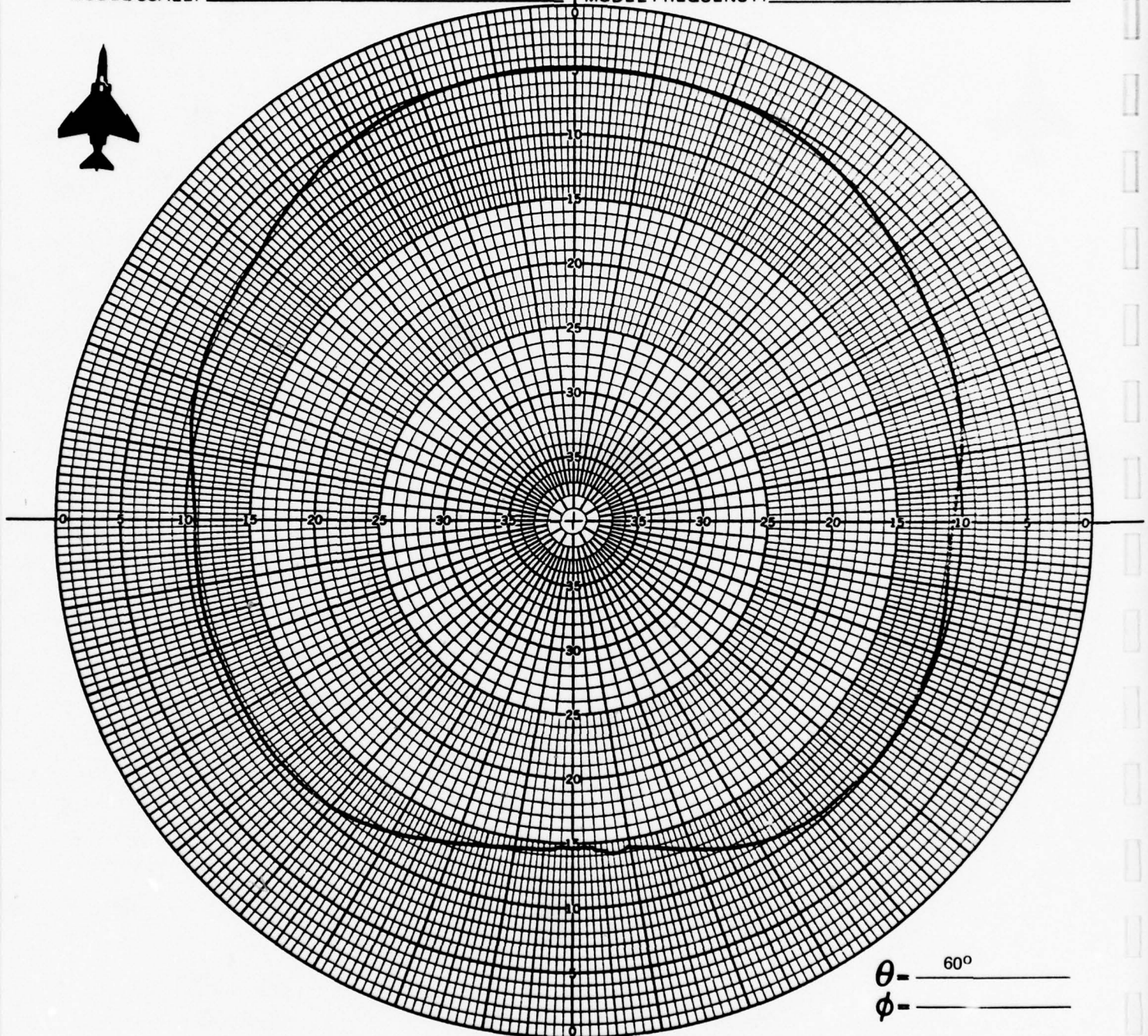
TEST IDENT.: 703-174 (F-4)

ANTENNA LOCATION: FINCAP

FULL SCALE FREQUENCY: 33 MHz

MODEL SCALE: 1/5

MODEL FREQUENCY: 165 MHz



θ - 60°
 ϕ - _____

CONFIGURATION: 24

INTEGRATOR COUNT: _____

REMARKS: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM

DATE: 3-25-77

DOCUMENT _____
REVISION _____

ANTENNA: MODIFIED NADC W/CAP (MED)

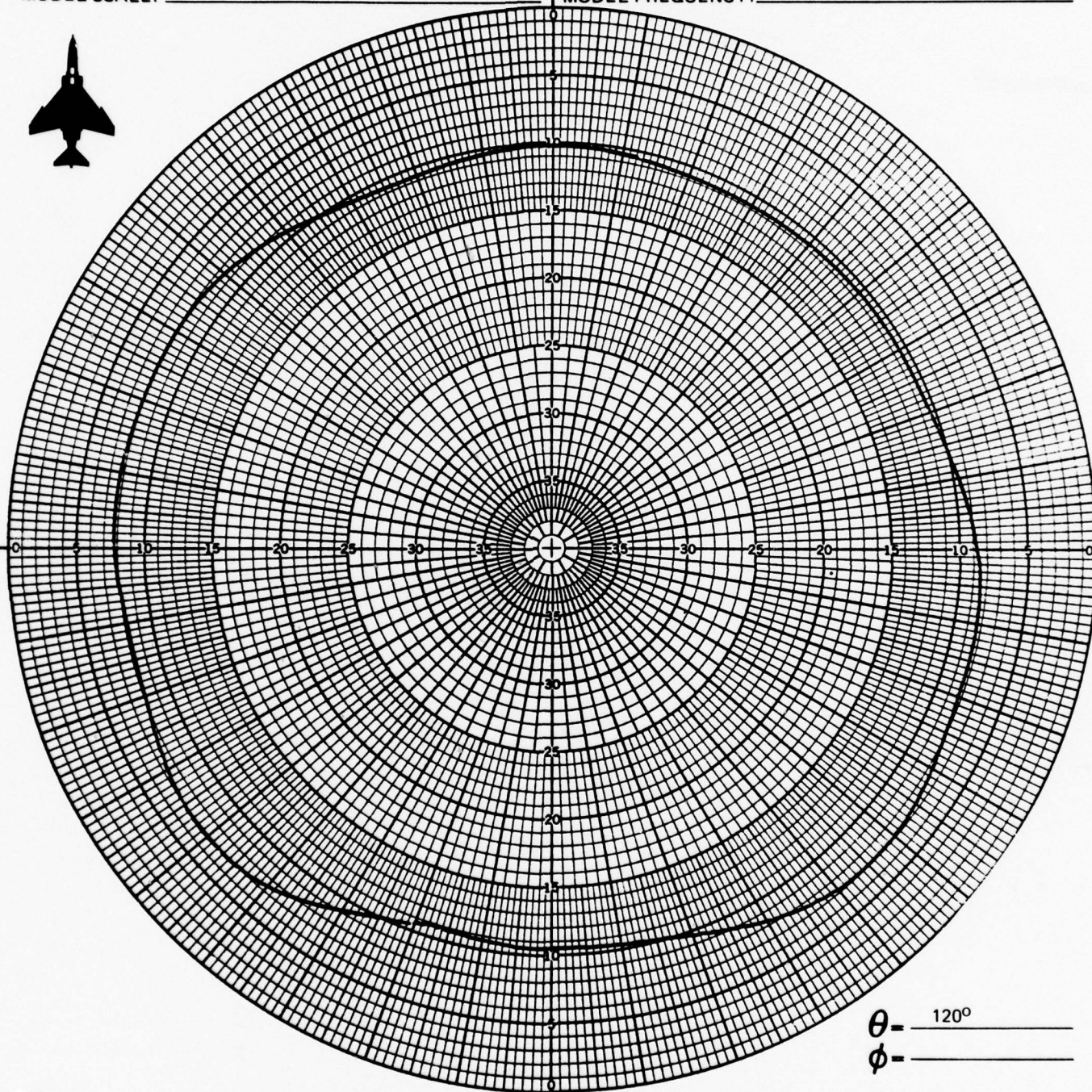
TEST IDENT.: 703-174 (F-4)

ANTENNA LOCATION: FINCAP

FULL SCALE FREQUENCY: 33 MHz

MODEL SCALE: 1/5

MODEL FREQUENCY: 165 MHz



θ - 120°
 ϕ - _____

CONFIGURATION: 24

INTEGRATOR COUNT: _____

REMARKS: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 3-25-77

DOCUMENT _____
REVISION _____

ANTENNA: MODIFIED NADC W/CAP (MED)

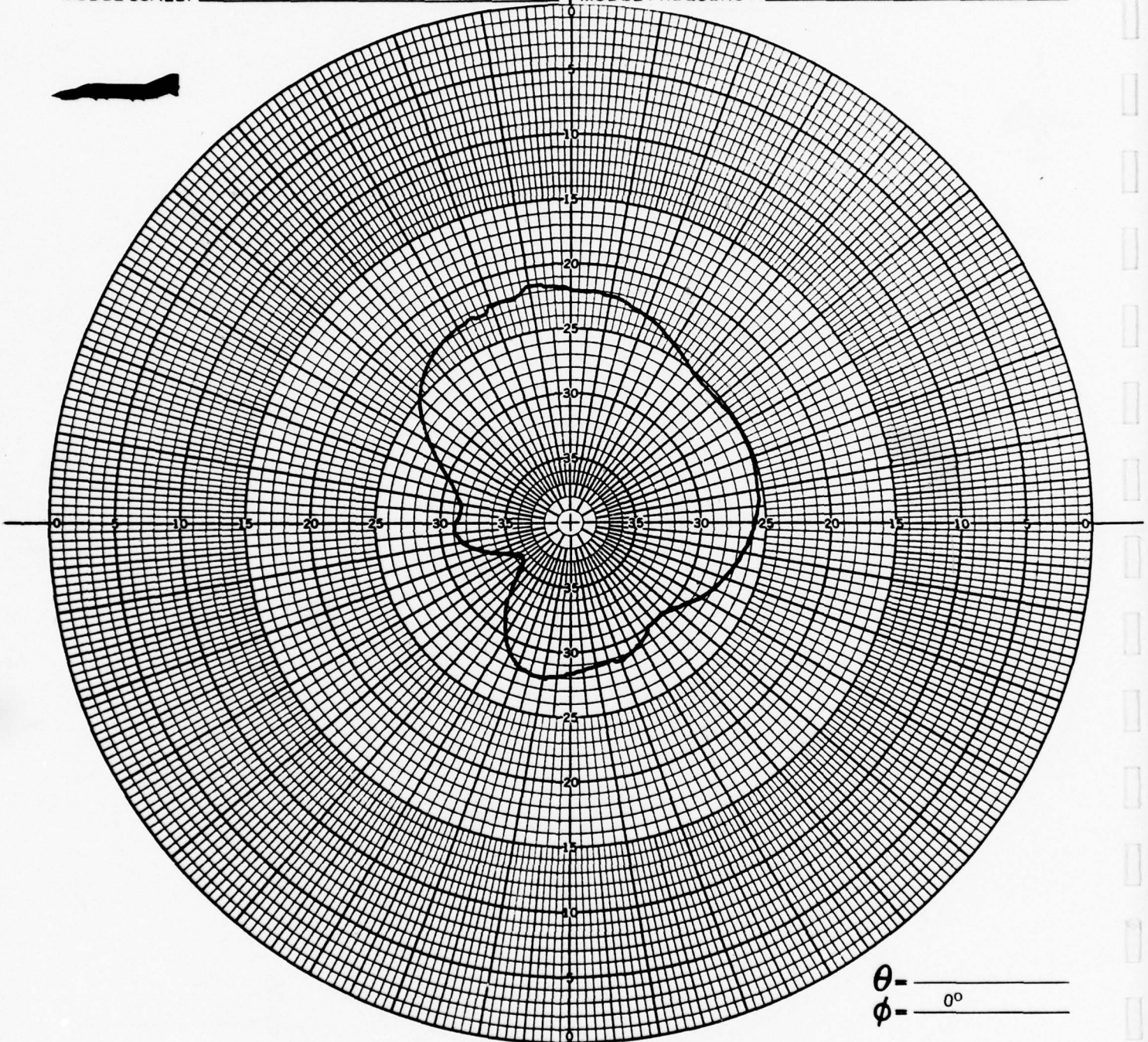
TEST IDENT.: 703-174 (F-4)

ANTENNA LOCATION: FINCAP

FULL SCALE FREQUENCY: 33 MHz

MODEL SCALE: 1/5

MODEL FREQUENCY: 165 MHz



θ - _____
 ϕ - 0°

CONFIGURATION: 24

INTEGRATOR COUNT: _____

REMARKS: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: 285 FT

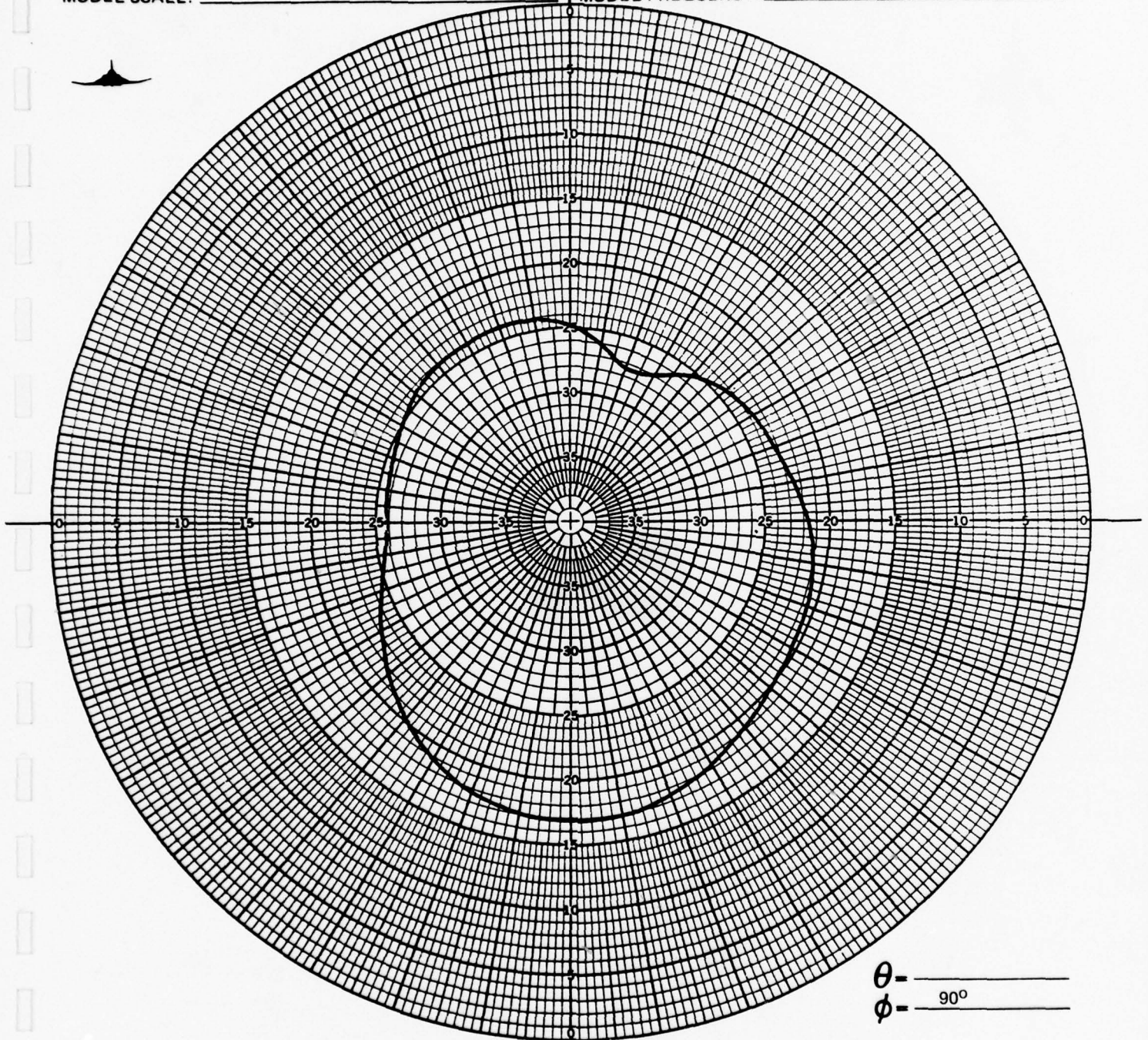
OBSERVER: PN, BM

DATE: 4-1-77

DOCUMENT _____
REVISION _____

ANTENNA: MODIFIED NADC W/CAP (MED)
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 33 MHz
MODEL FREQUENCY: 165 MHz



θ - _____
 ϕ - 90°

CONFIGURATION: 24

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 4-1-77

DOCUMENT _____
REVISION _____

ANTENNA: MODIFIED NADC W/CAP (MED)

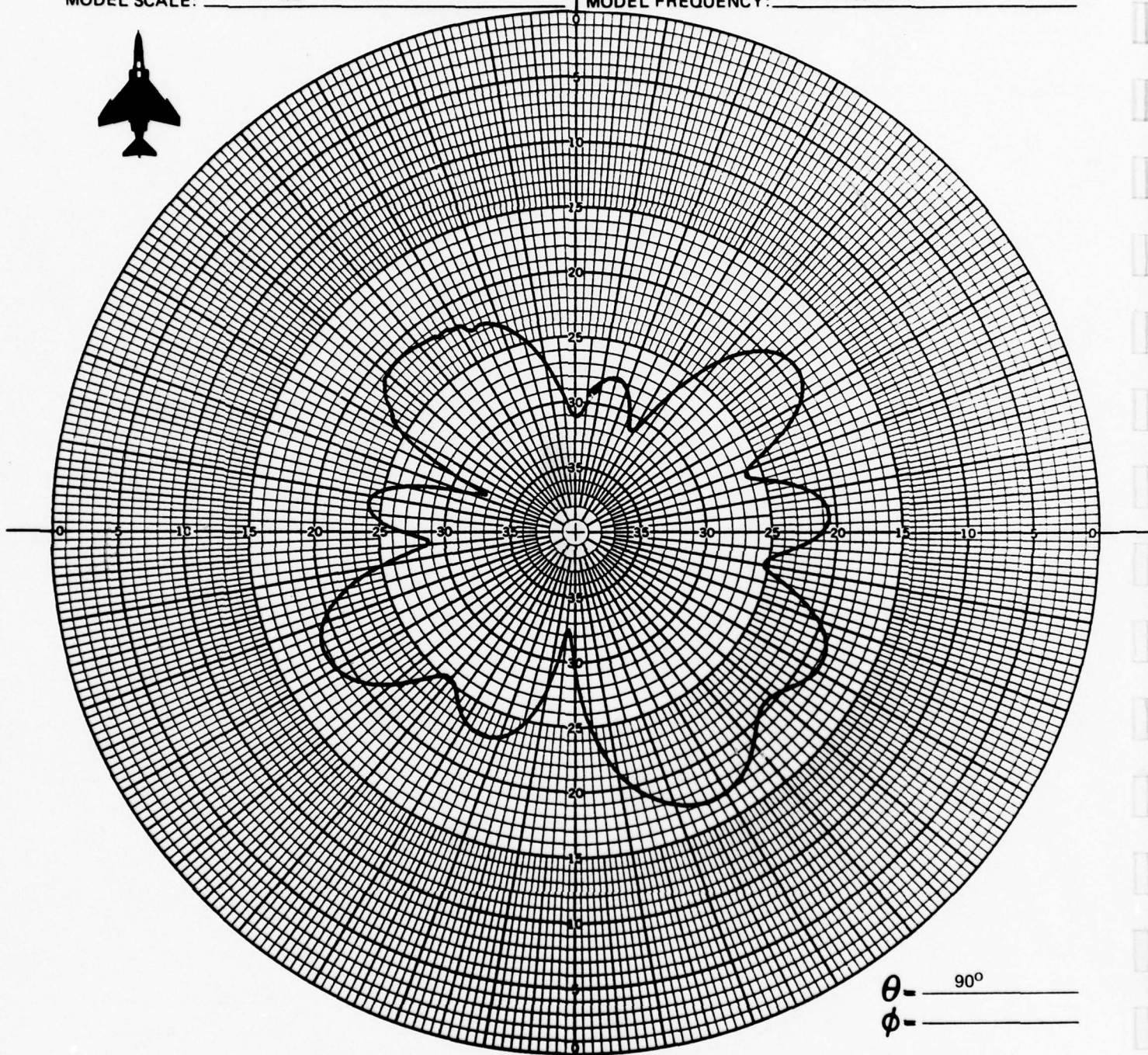
ANTENNA LOCATION: FINCAP

MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)

FULL SCALE FREQUENCY: 33 MHz

MODEL FREQUENCY: 165 MHz



θ - 90°
 ϕ - _____

CONFIGURATION: 24

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

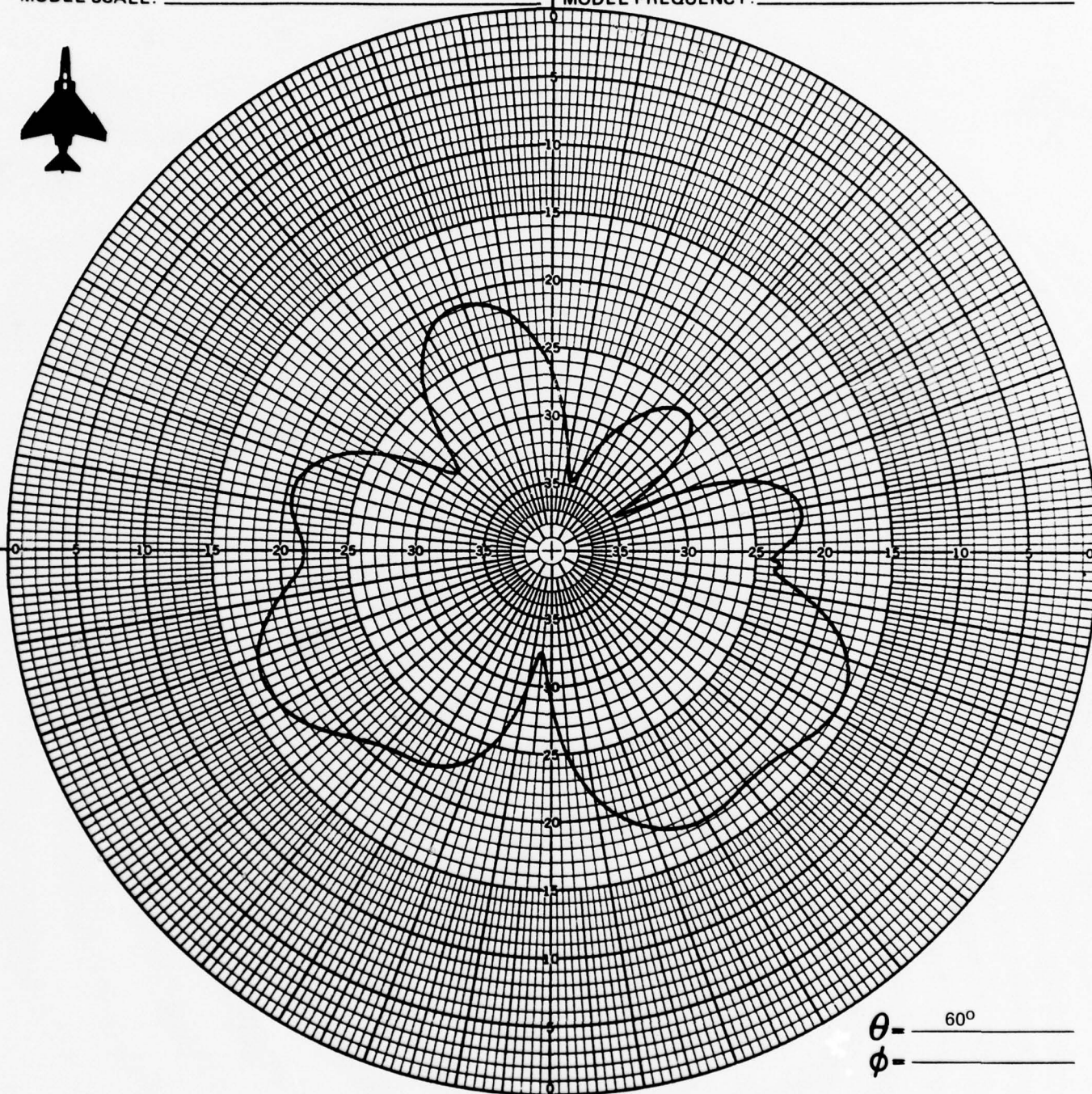
TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 4-1-77

DOCUMENT _____
REVISION _____

ANTENNA: MODIFIED NADC W/CAP (MED)
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 33 MHz
MODEL FREQUENCY: 165 MHz



θ - 60°
 ϕ - _____

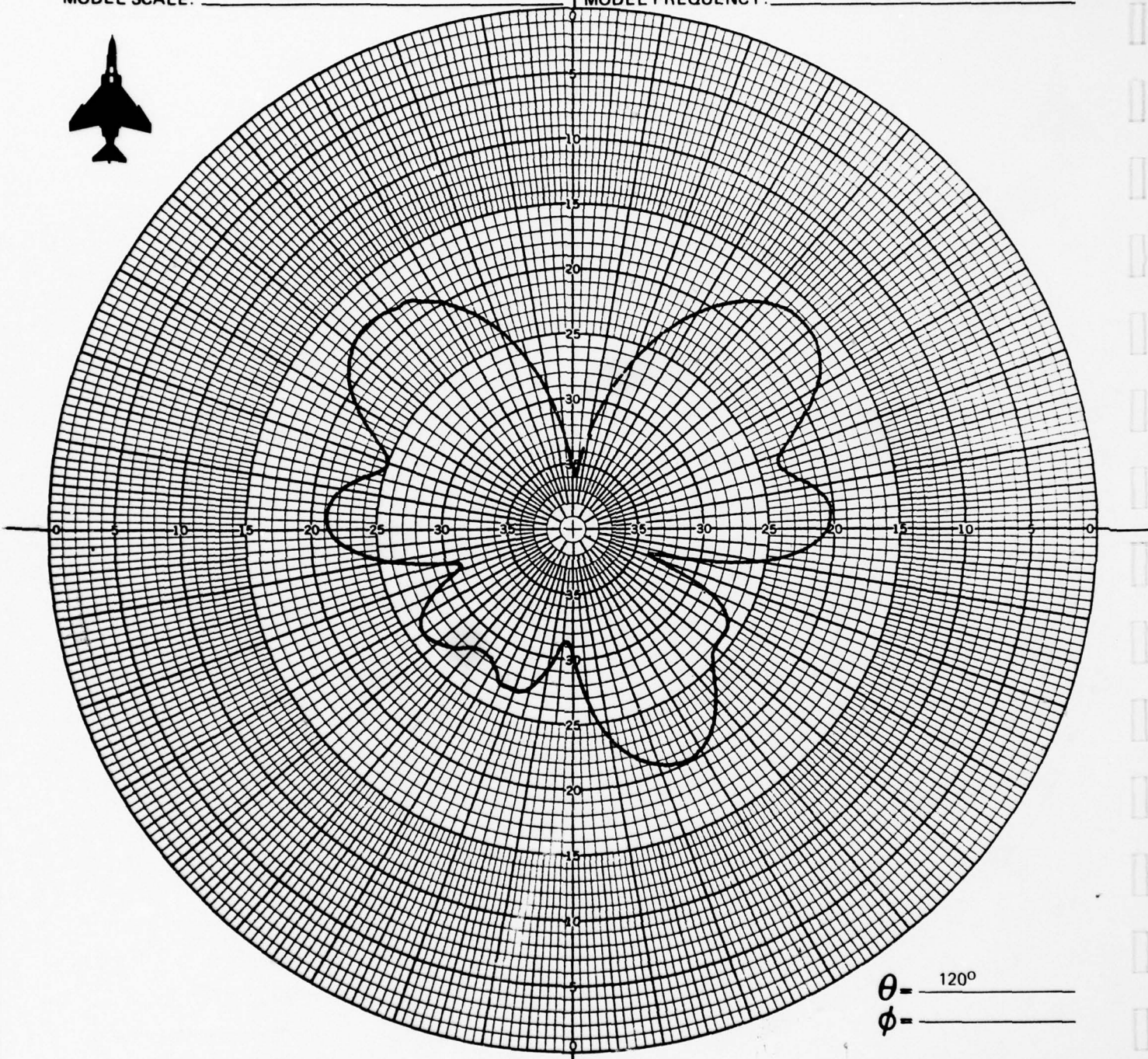
CONFIGURATION: 24
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E \phi$ ☒ $E \theta$ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: 285 FT
OBSERVER: PN, BM DATE: 4-1-77

DOCUMENT _____
REVISION _____

ANTENNA: MODIFIED NADC W/CAP (MED)
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 33 MHz
MODEL FREQUENCY: 165 MHz



θ - 120°
 ϕ - _____

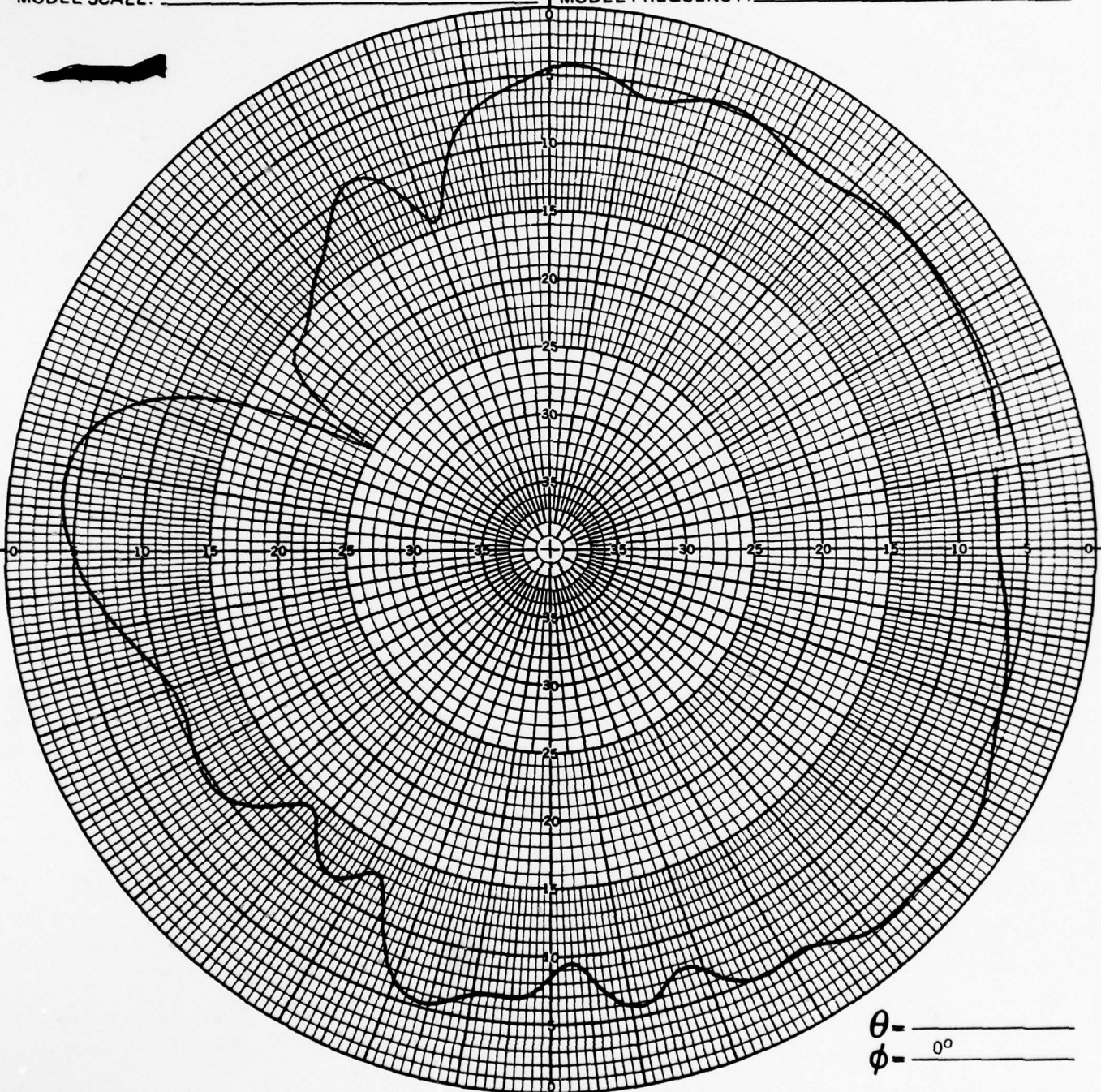
CONFIGURATION: 24
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: 285 FT
OBSERVER: PN, BM DATE: 4-1-77

DOCUMENT _____
REVISION _____

ANTENNA: MODIFIED NADC W/CAP (MED)
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 76 MHz
MODEL FREQUENCY: 380 MHz



CONFIGURATION: 24

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 3-25-77

ANTENNA: MODIFIED NADC W/CAP (MED)

ANTENNA LOCATION: FINCAP

MODEL SCALE: 1/5

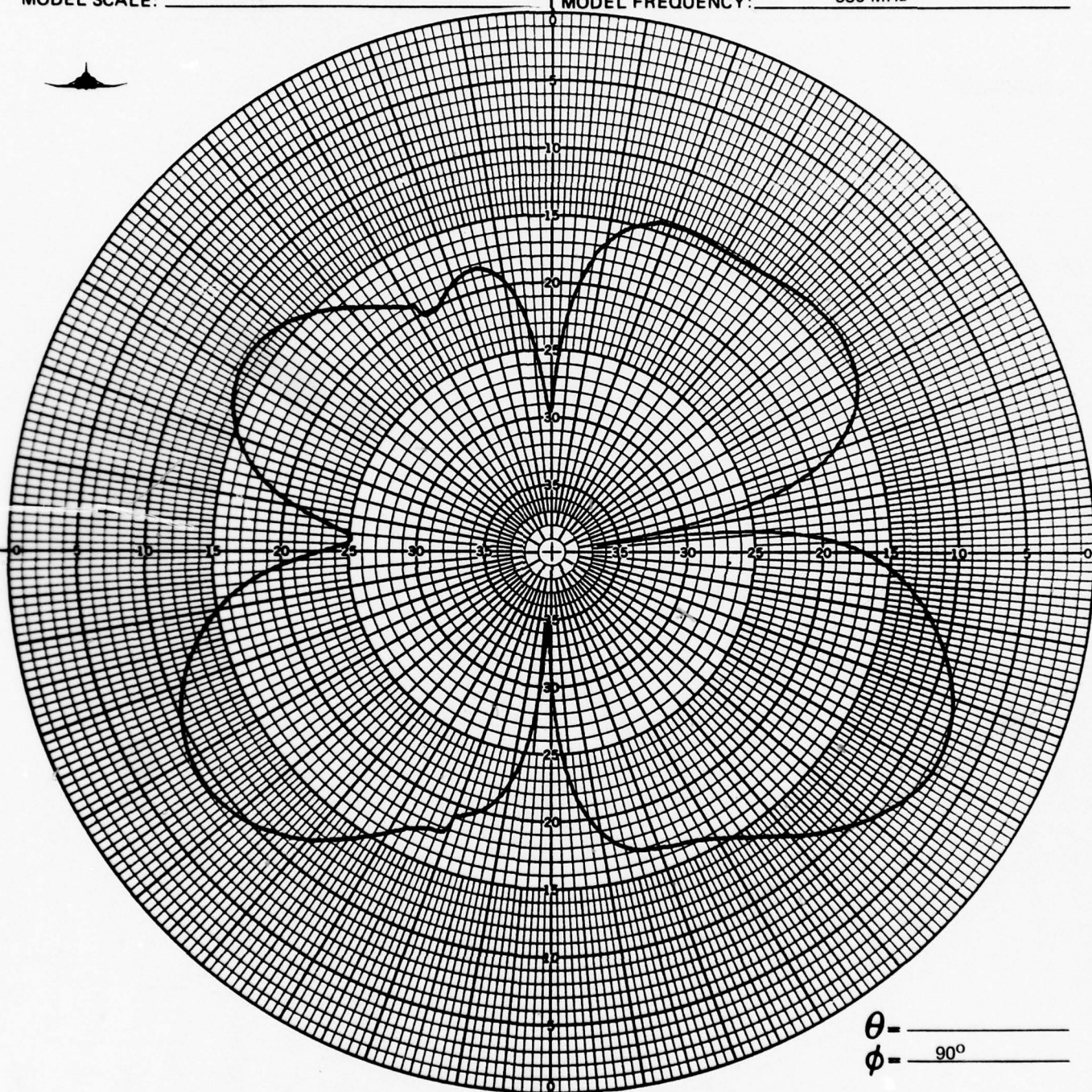
DOCUMENT _____

REVISION _____

TEST IDENT.: 703-174 (F-4)

FULL SCALE FREQUENCY: 76 MHz

MODEL FREQUENCY: 380 MHz



CONFIGURATION: 24

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 3-25-77

θ - _____
 ϕ - 90°

DOCUMENT _____
REVISION _____

ANTENNA: MODIFIED NADC W/CAP (MED)

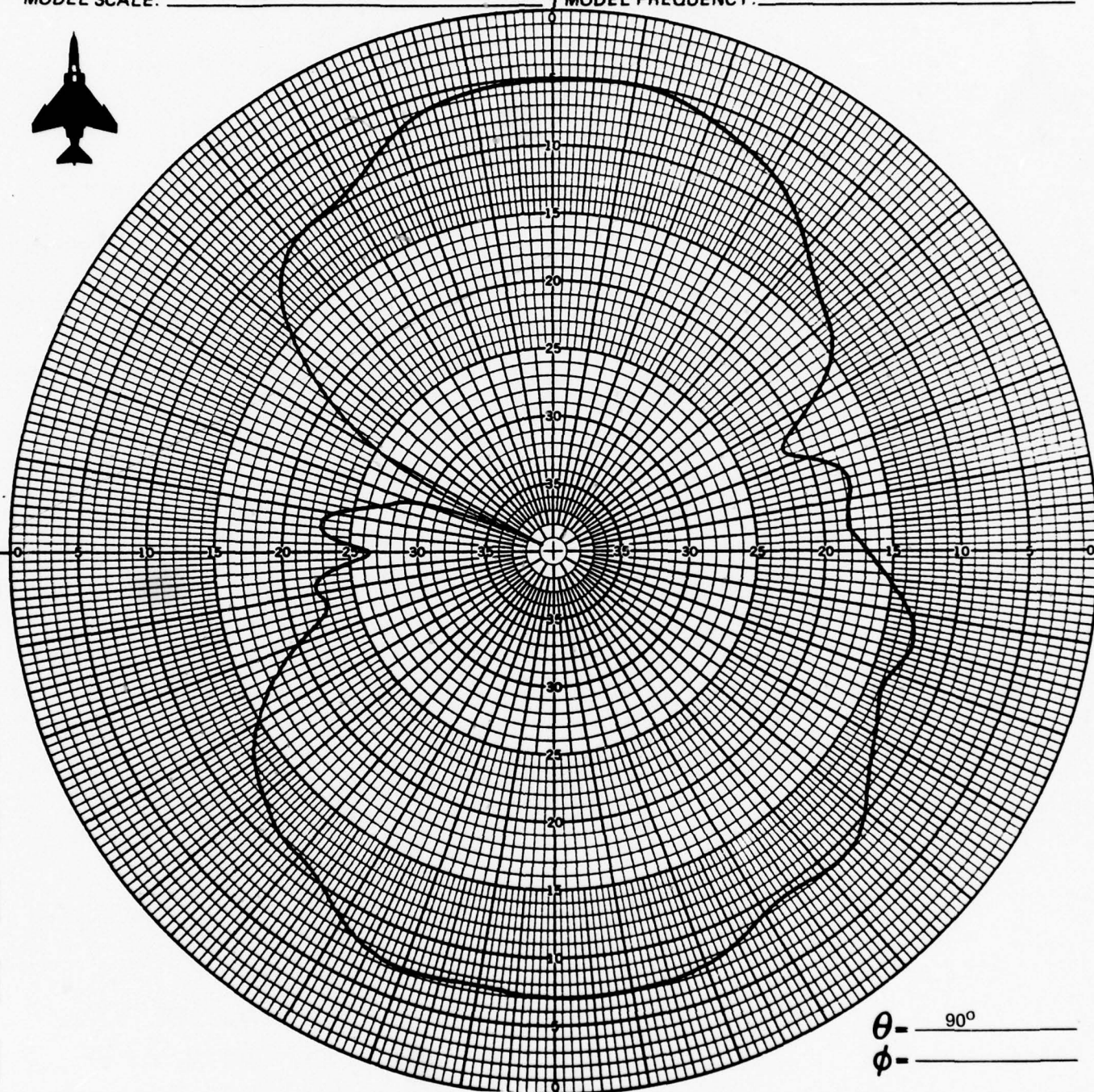
ANTENNA LOCATION: FINCAP

MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)

FULL SCALE FREQUENCY: 76 MHz

MODEL FREQUENCY: 380 MHz



θ - 90°
 ϕ - _____

CONFIGURATION: 24

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: E ☐ ϕ ☐ E θ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 3-25-77

DOCUMENT _____
REVISION _____

ANTENNA: MODIFIED NADC W/CAP (MED)

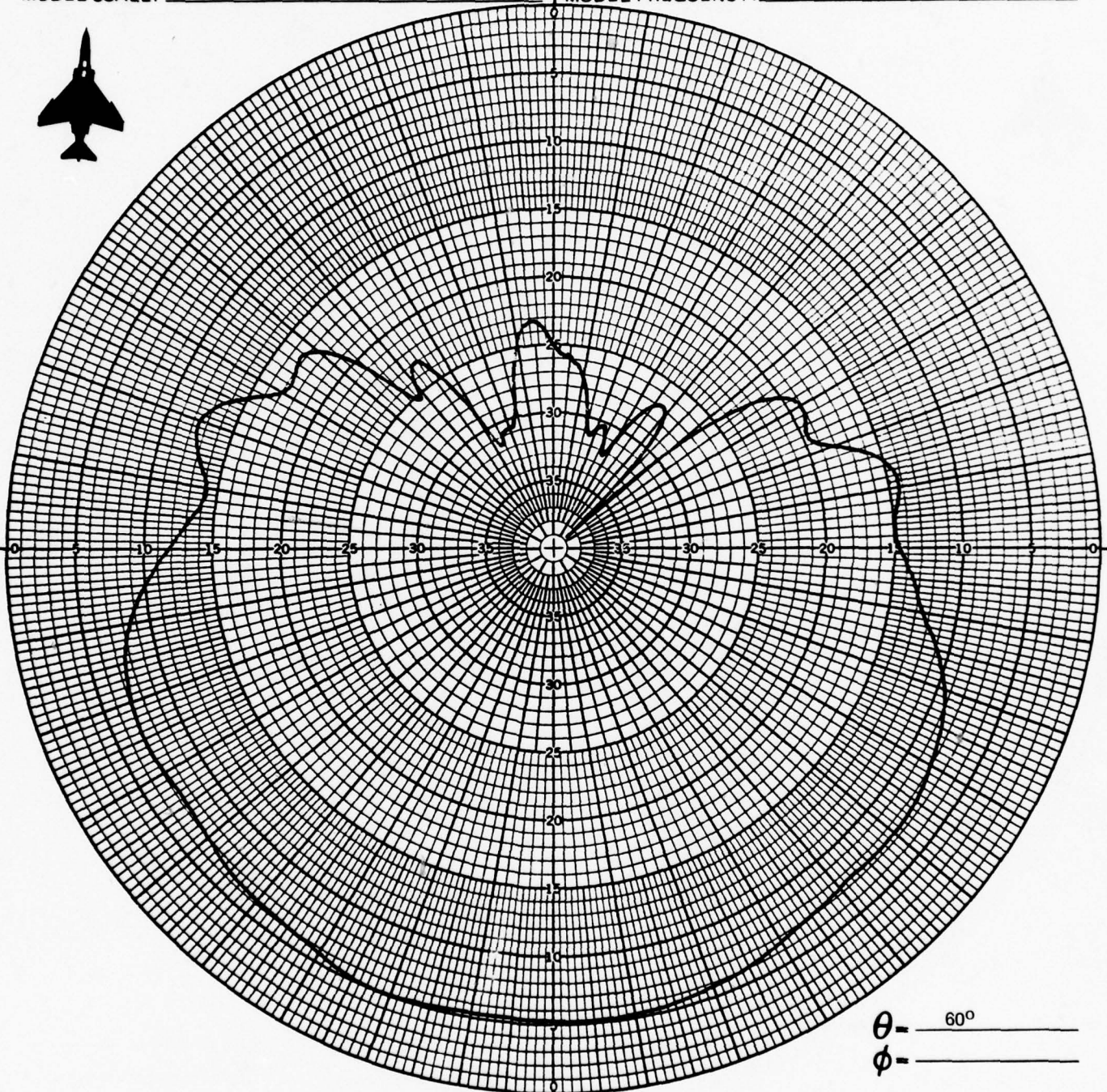
ANTENNA LOCATION: FINCAP

MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)

FULL SCALE FREQUENCY: 76 MHz

MODEL FREQUENCY: 380 MHz



θ - 60°
 ϕ - _____

CONFIGURATION: 24

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM

DATE: 3-25-77

DOCUMENT _____
REVISION _____

ANTENNA: MODIFIED NADC W/CAP (MED)

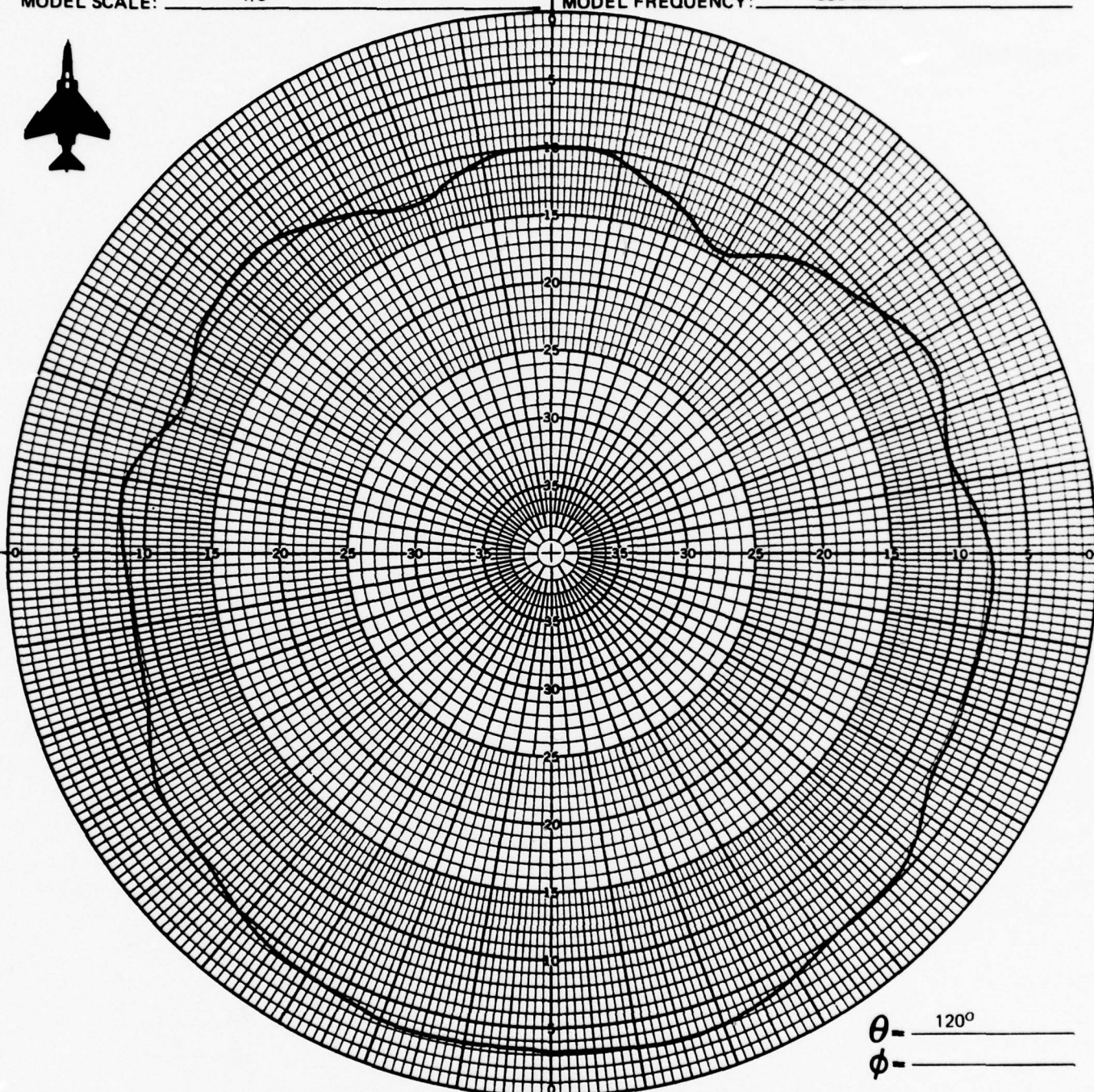
TEST IDENT.: 703-174 (F-4)

ANTENNA LOCATION: FINCAP

FULL SCALE FREQUENCY: 76 MHz

MODEL SCALE: 1/5

MODEL FREQUENCY: 380 MHz



θ - 120°
 ϕ - _____

CONFIGURATION: 24

INTEGRATOR COUNT: _____

REMARKS: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 3-25-77

DOCUMENT _____
REVISION _____

ANTENNA: MODIFIED NADC W/CAP (MED)

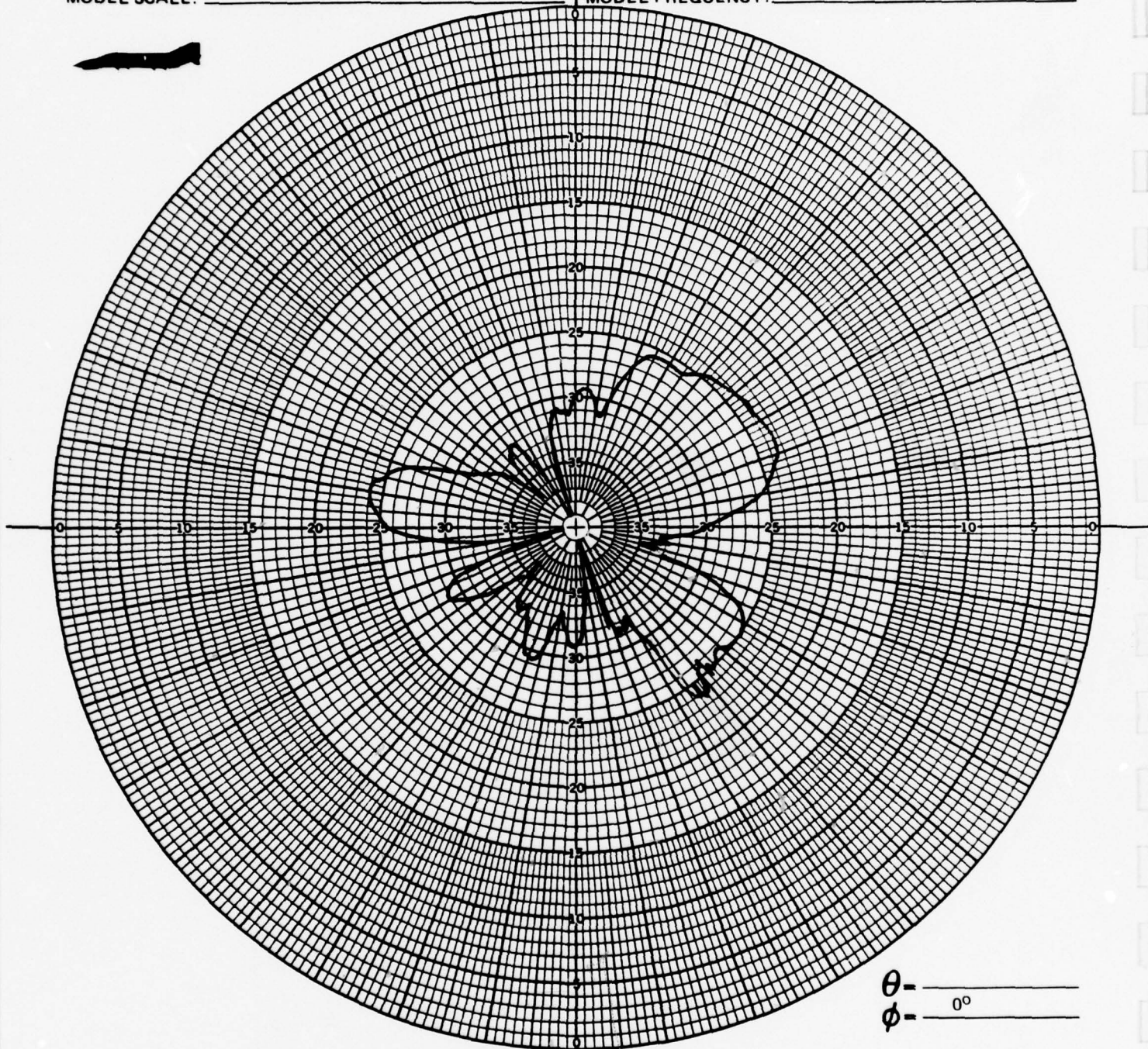
ANTENNA LOCATION: FINCAP

MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)

FULL SCALE FREQUENCY: 76 MHz

MODEL FREQUENCY: 380 MHz



θ = _____
 ϕ = 0°

CONFIGURATION: 24

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM

DATE: 3-25-77

DOCUMENT _____
REVISION _____

ANTENNA: MODIFIED NADC W/CAP (MED)

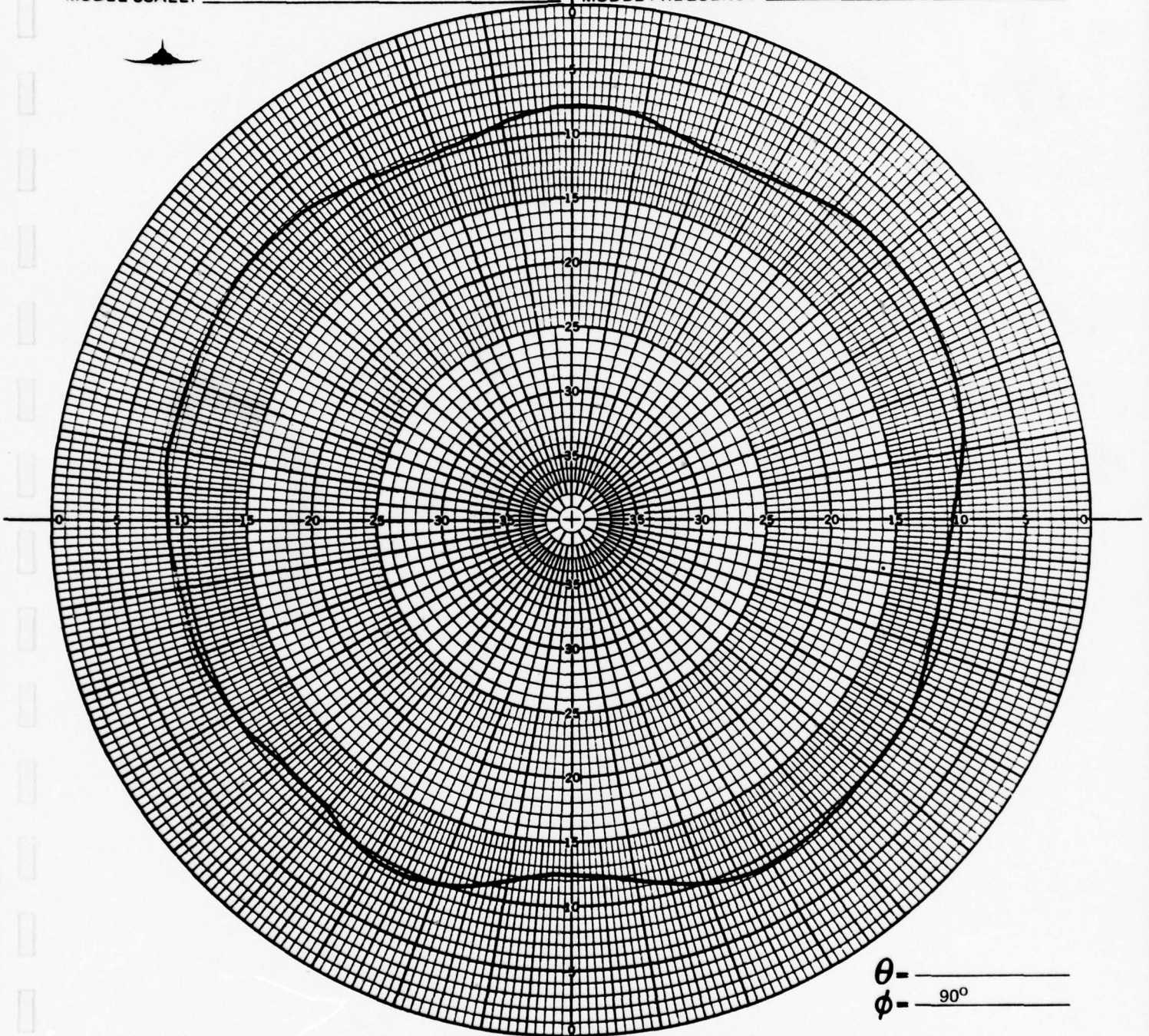
ANTENNA LOCATION: FINCAP

MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)

FULL SCALE FREQUENCY: 76 MHz

MODEL FREQUENCY: 380 MHz



θ - _____
 ϕ - 90°

CONFIGURATION: 24

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: ☒ $E\phi$ ☐ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 3-25-77

DOCUMENT _____
REVISION _____

ANTENNA: MODIFIED NADC W/CAP (MED)

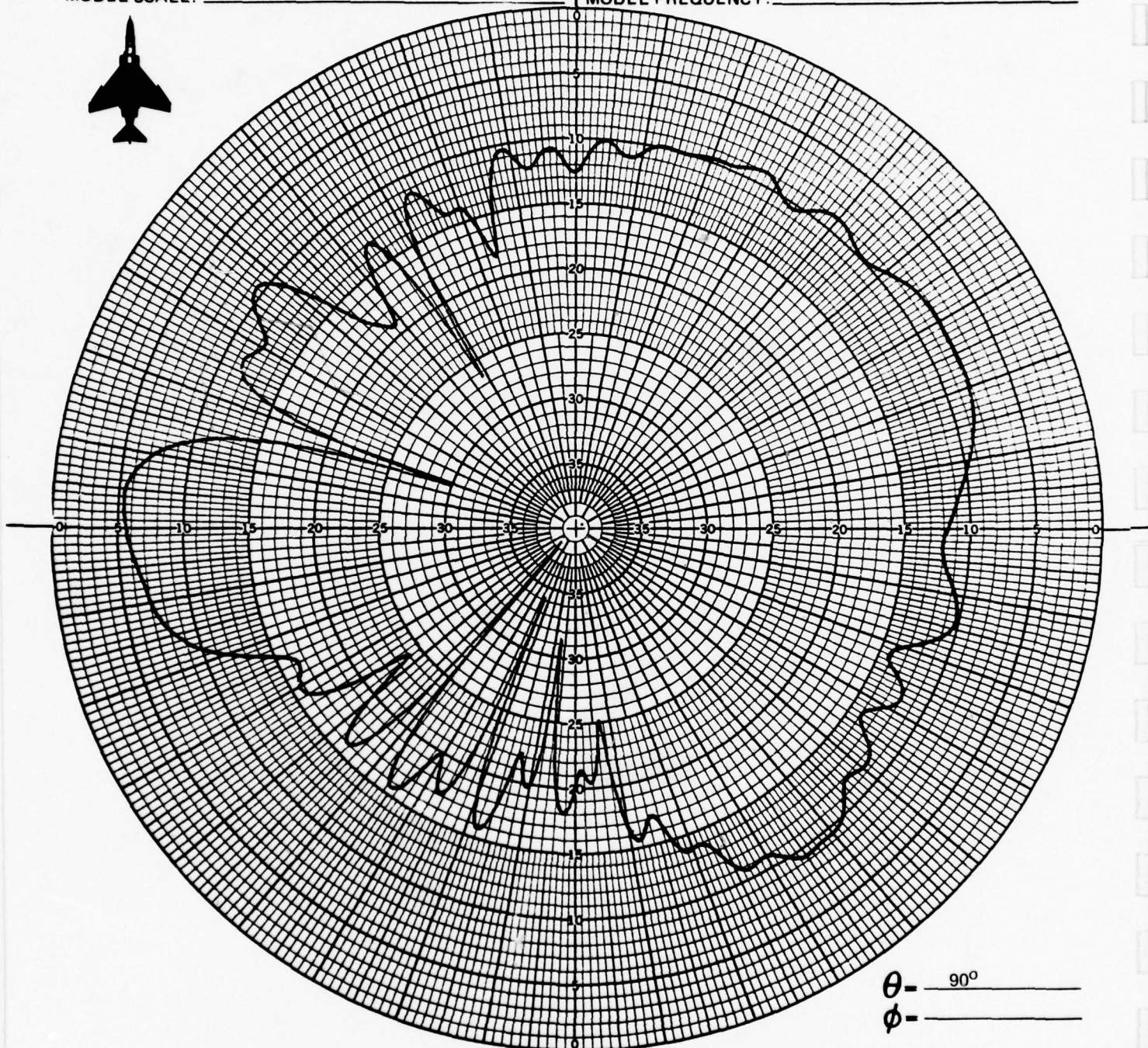
ANTENNA LOCATION: FINCAP

MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)

FULL SCALE FREQUENCY: 76 MHz

MODEL FREQUENCY: 380 MHz



θ - 90°
 ϕ - _____

CONFIGURATION: 24

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM

DATE: 3-25-77

DOCUMENT _____
REVISION _____

ANTENNA: MODIFIED NADC W/CAP (MED)

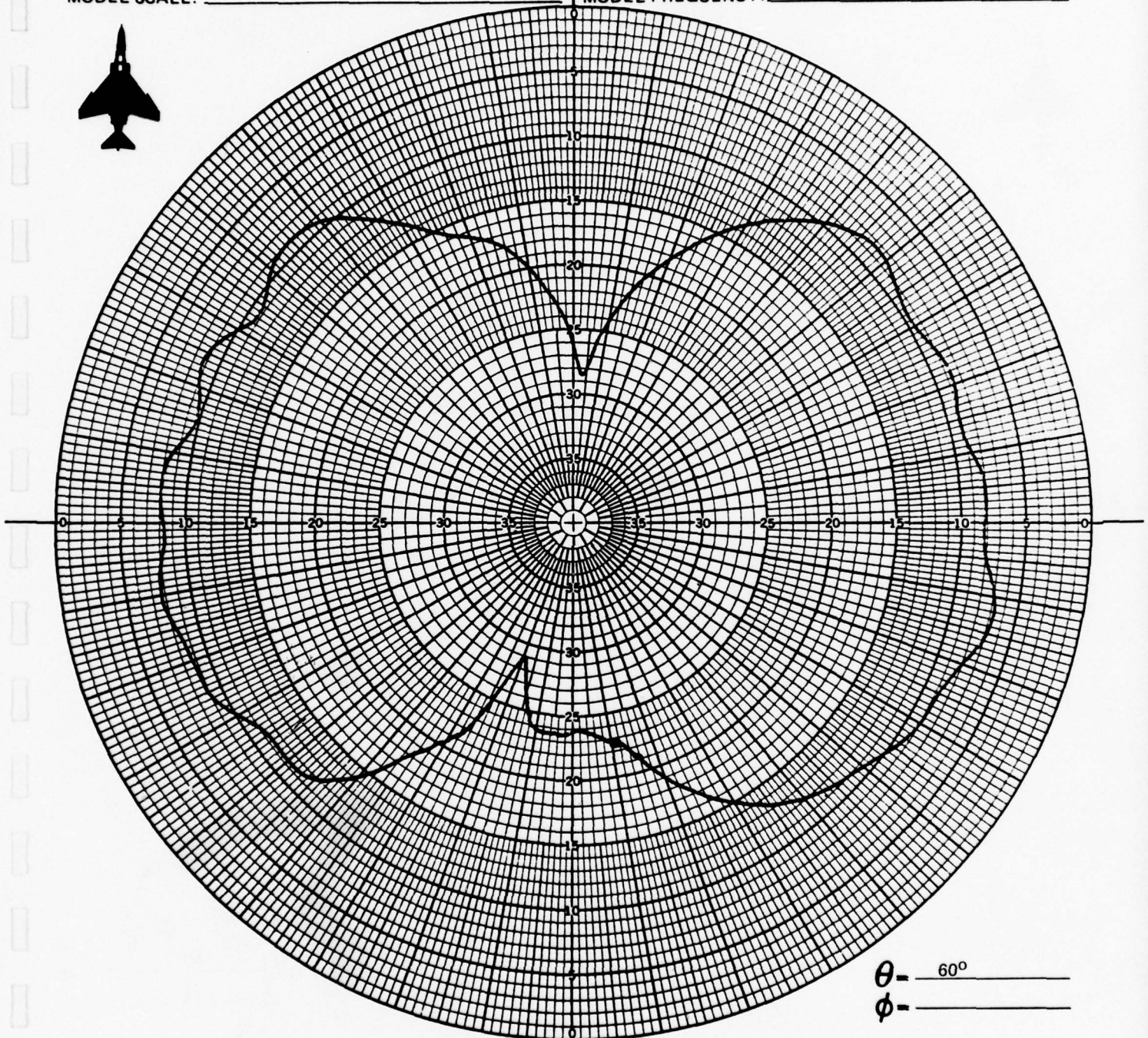
ANTENNA LOCATION: FINCAP

MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)

FULL SCALE FREQUENCY: 76 MHz

MODEL FREQUENCY: 380 MHz



θ - 60°
 ϕ - _____

CONFIGURATION: 24

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: 285 FT

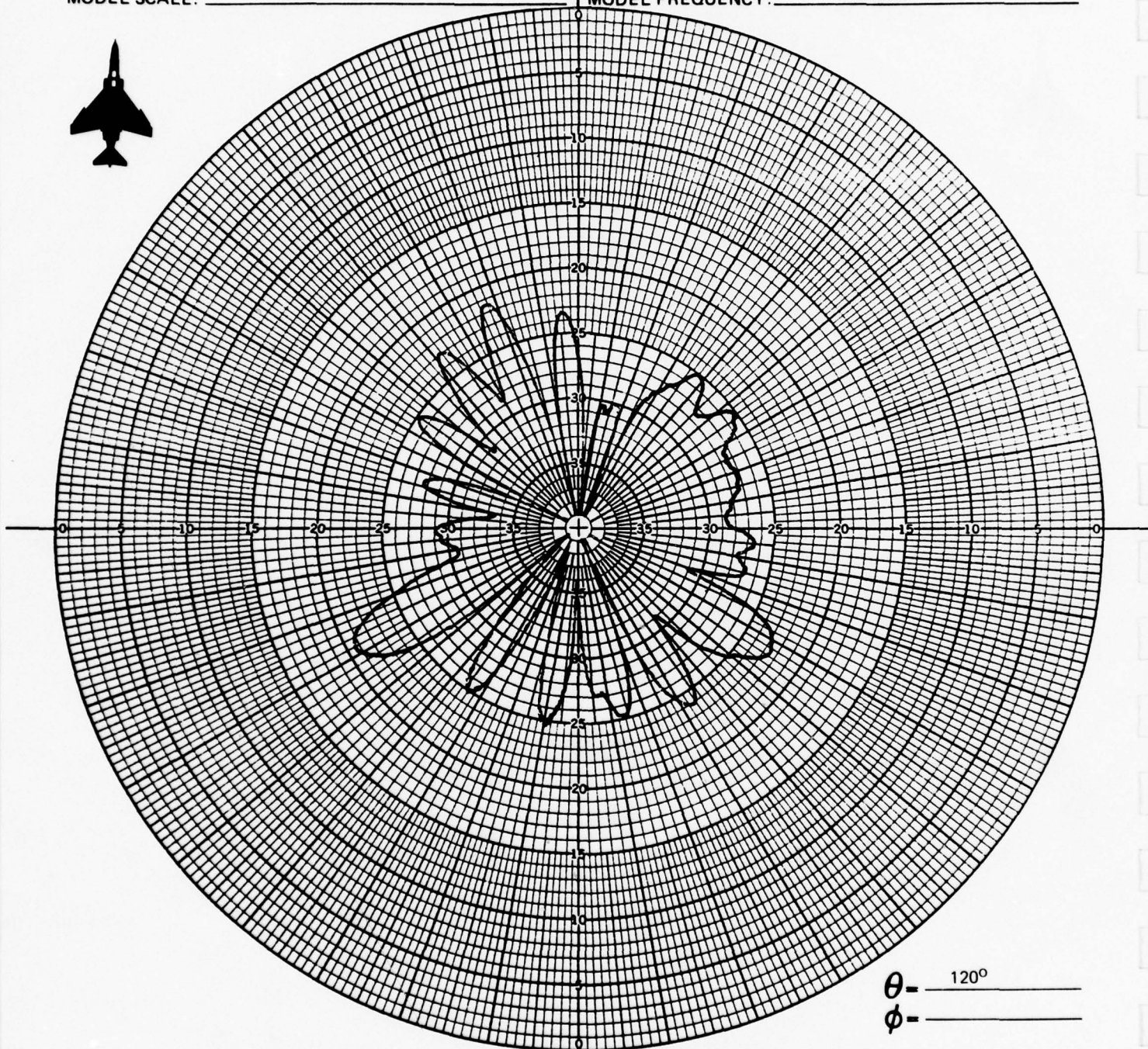
OBSERVER: PN, BM

DATE: 3-25-77

DOCUMENT _____
REVISION _____

ANTENNA: MODIFIED NADC W/CAP (MED)
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 76 MHz
MODEL FREQUENCY: 380 MHz



θ - 120°
 ϕ - _____

CONFIGURATION: 24

REMARKS: _____

INTEGRATOR COUNT: _____

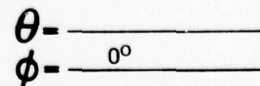
POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 3-25-77

MODEL FREQUENCY: 725 MHz

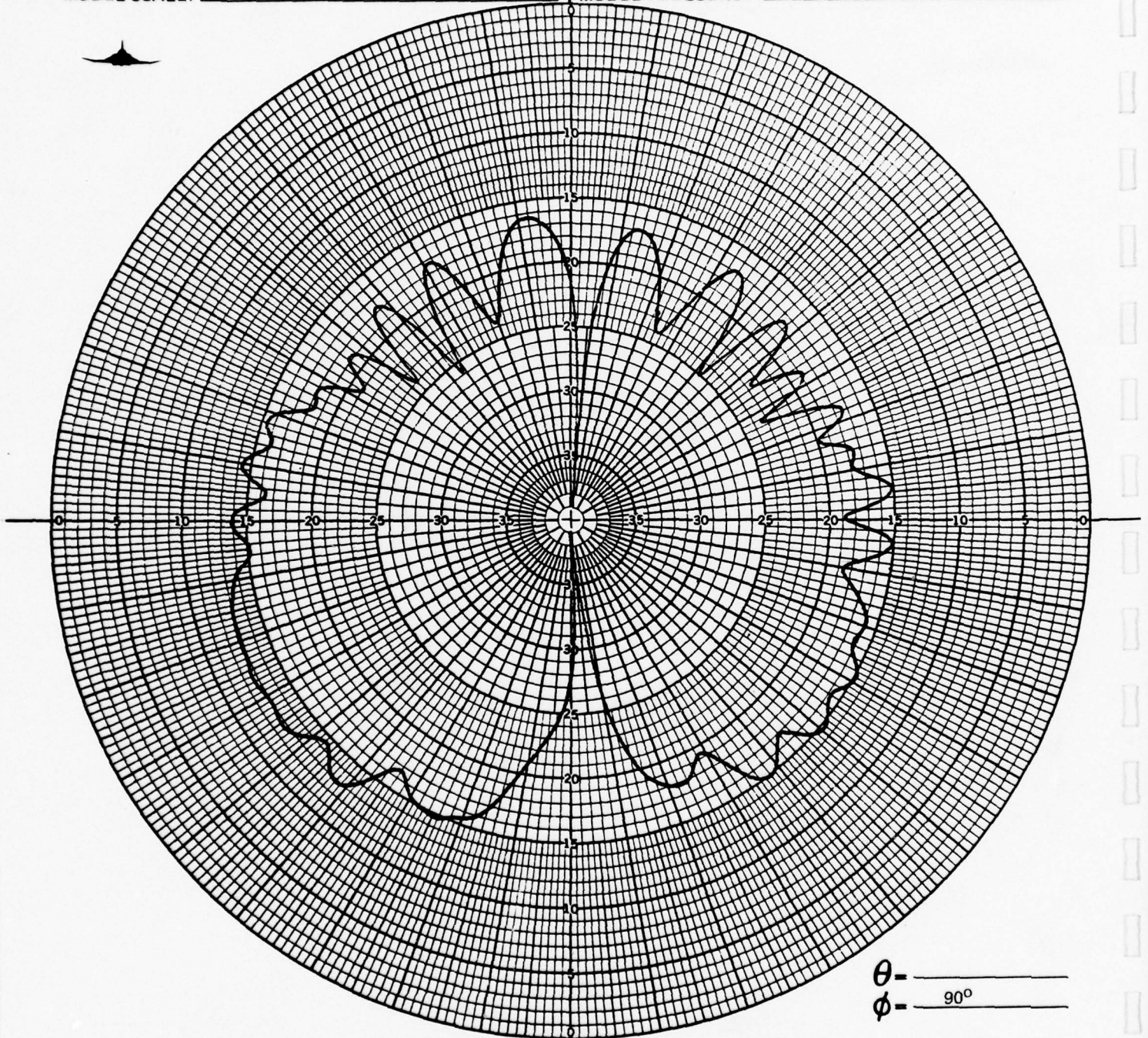


OBSERVER: PN, BM DATE: 3-29-77

DOCUMENT _____
REVISION _____

ANTENNA: MODIFIED NADC W/CAP (MED)
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 145 MHz
MODEL FREQUENCY: 725 MHz



θ - _____
 ϕ - 90°

CONFIGURATION: 24

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

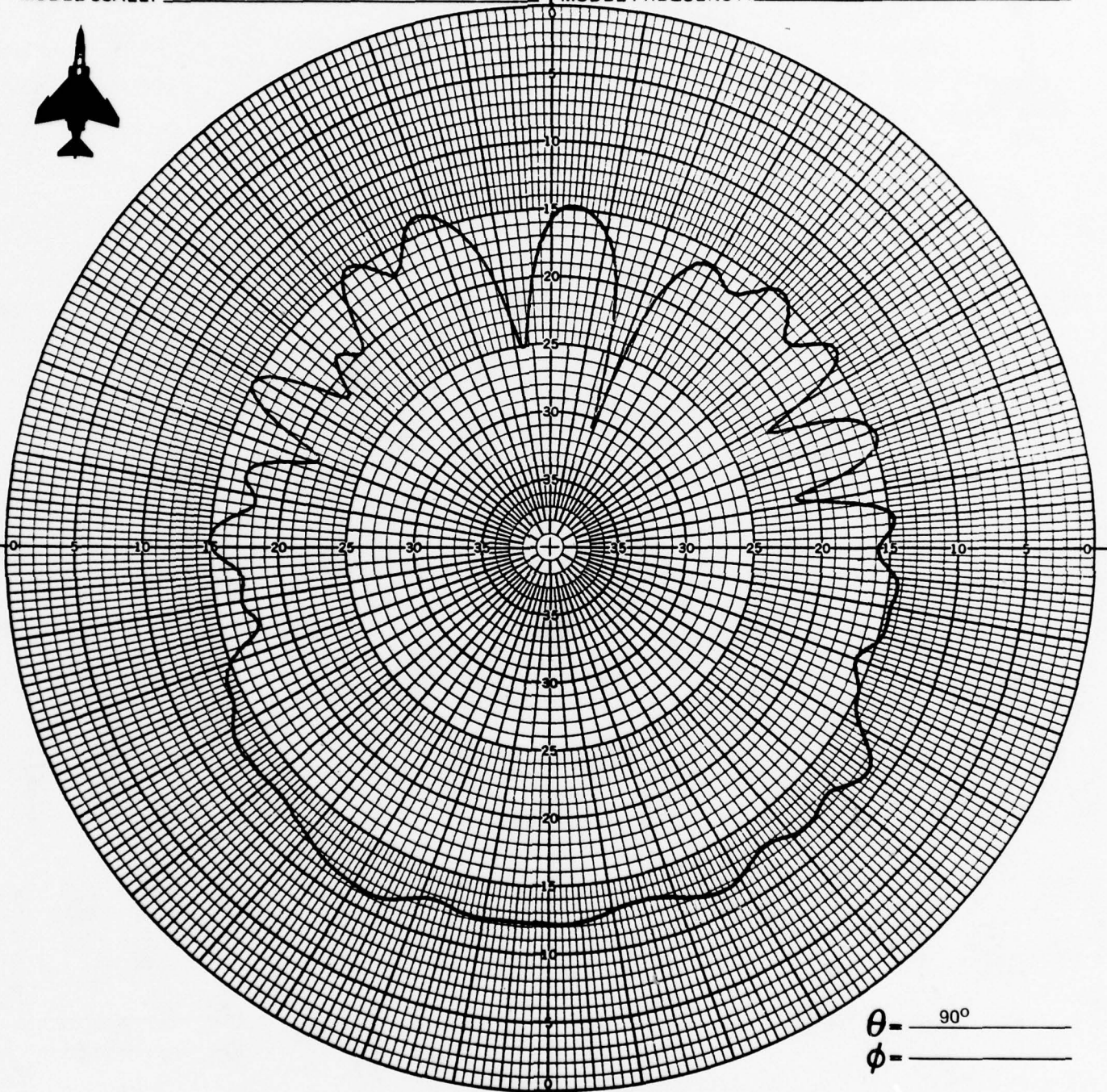
TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 3-29-77

DOCUMENT _____
REVISION _____

ANTENNA: MODIFIED NADC W/CAP (MED)
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 145 MHz
MODEL FREQUENCY: 725 MHz



θ - 90°
 ϕ - _____

CONFIGURATION: 24
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: 285 FT
OBSERVER: PN, BM DATE: 3-29-77

DOCUMENT _____
REVISION _____

ANTENNA: MODIFIED NADC W/CAP (MED)

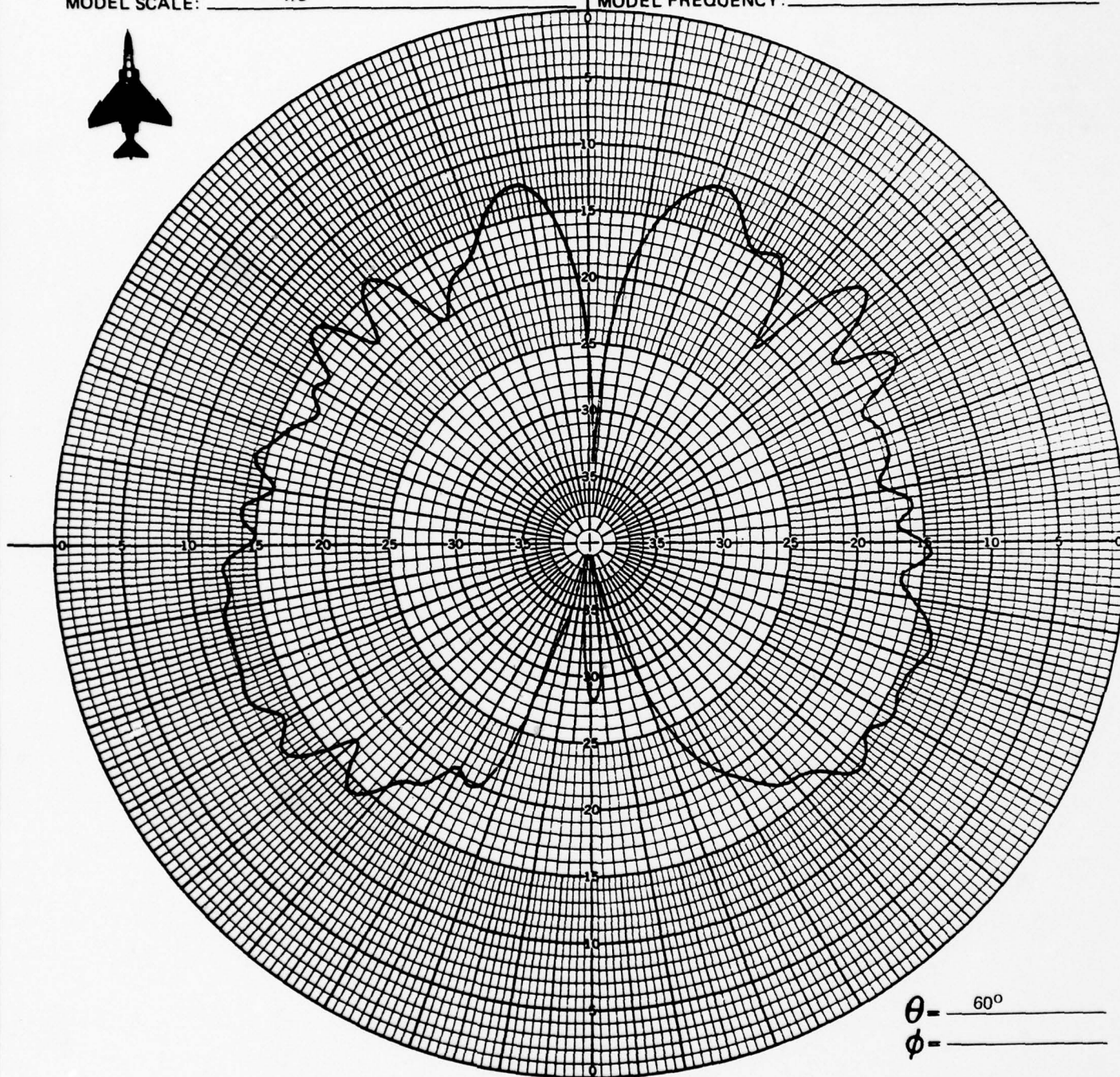
ANTENNA LOCATION: FINCAP

MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)

FULL SCALE FREQUENCY: 145 MHz

MODEL FREQUENCY: 725 MHz



θ - 60°
 ϕ - _____

CONFIGURATION: 24

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 3-29-77

DOCUMENT _____
REVISION _____

ANTENNA: MODIFIED NADC W/CAP (MED)

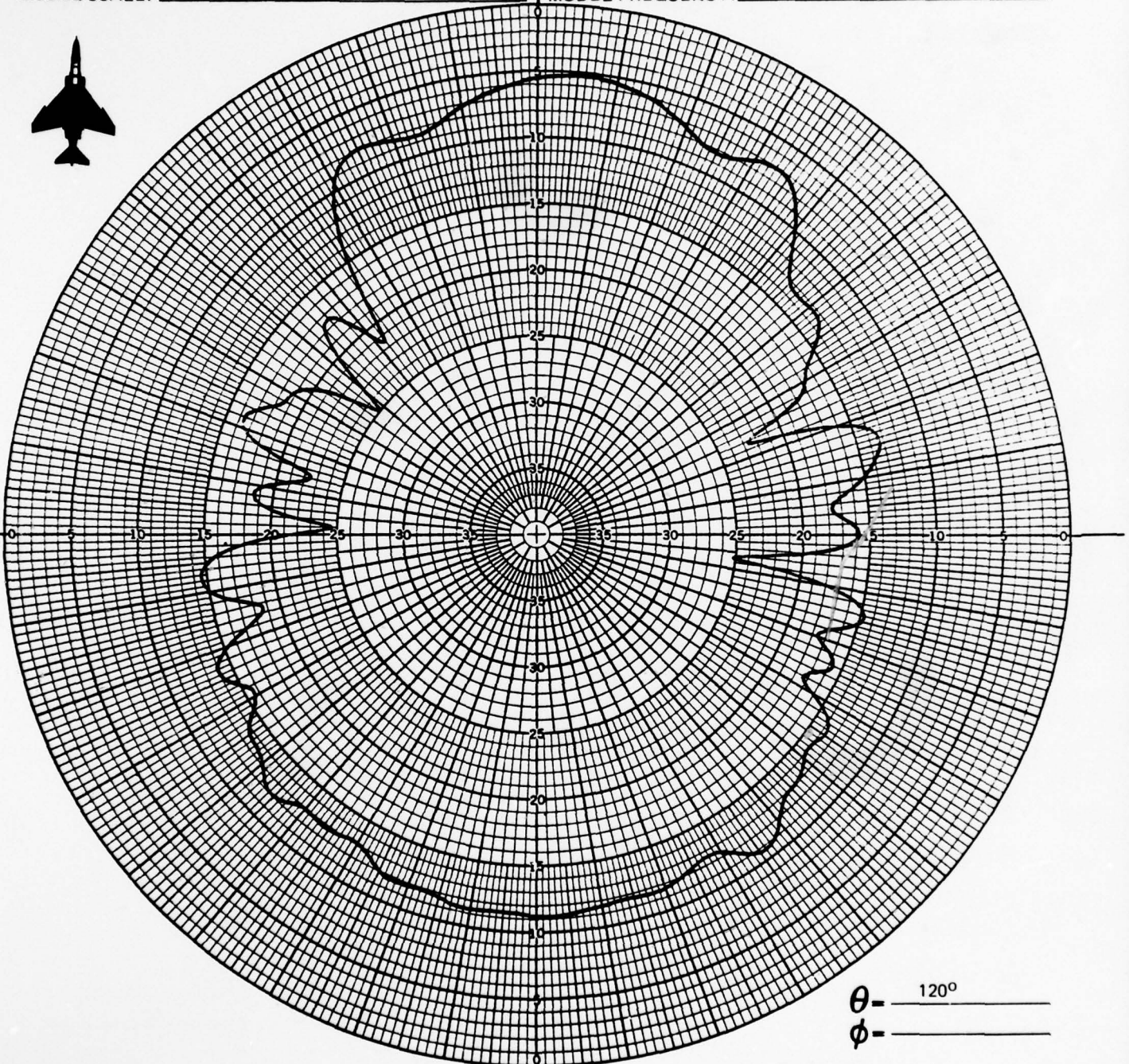
ANTENNA LOCATION: FINCAP

MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)

FULL SCALE FREQUENCY: 145 MHz

MODEL FREQUENCY: 725 MHz



θ - 120°
 ϕ - _____

CONFIGURATION: 24

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 3-29-77

DOCUMENT _____
REVISION _____

ANTENNA: MODIFIED NADC W/CAP (MED)

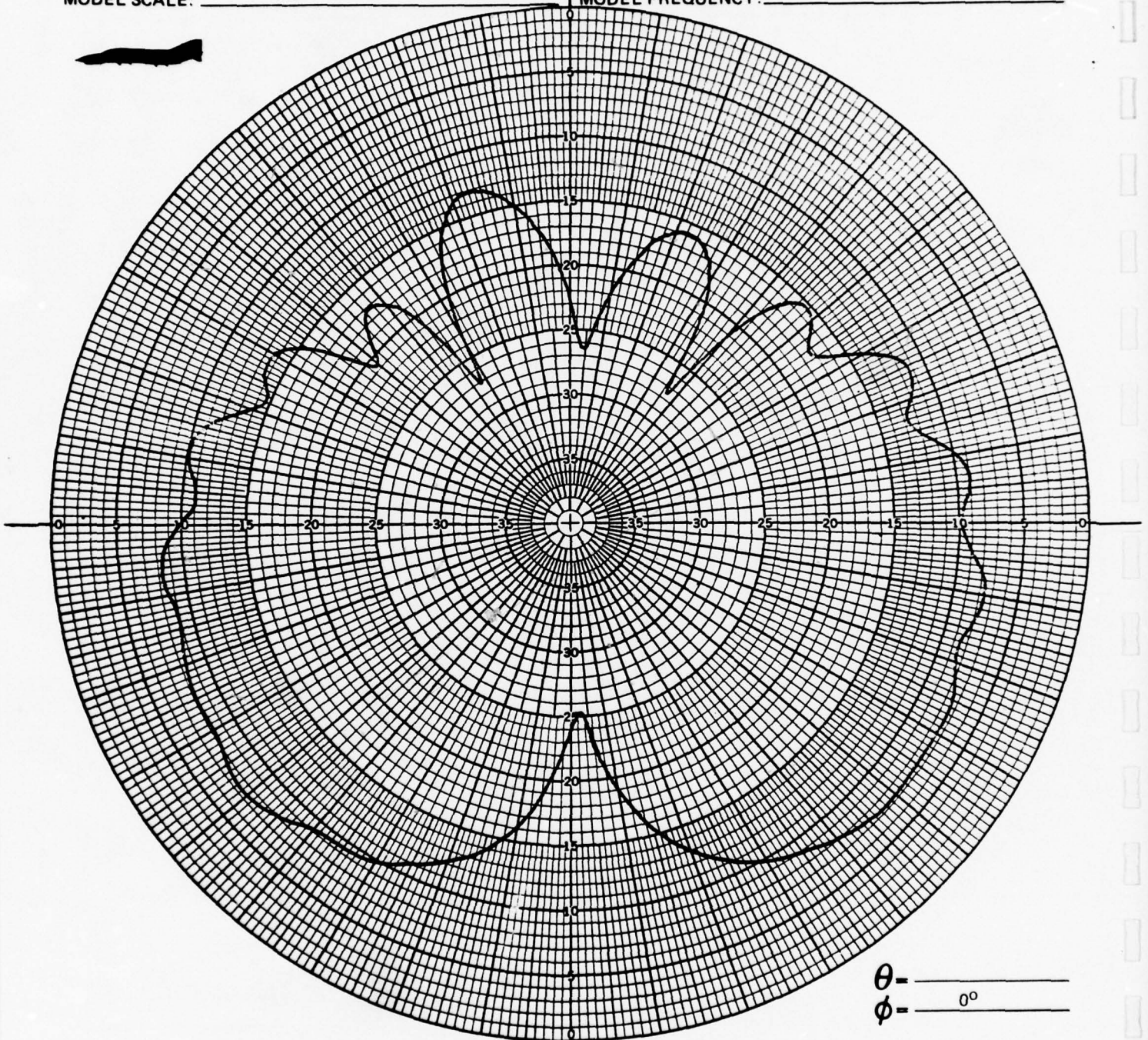
ANTENNA LOCATION: FINCAP

MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)

FULL SCALE FREQUENCY: 145 MHz

MODEL FREQUENCY: 725 MHz



CONFIGURATION: 24

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: ☒ E ϕ ☐ E θ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 3-29-77

DOCUMENT _____
REVISION _____

ANTENNA: MODIFIED NADC W/CAP (MED)

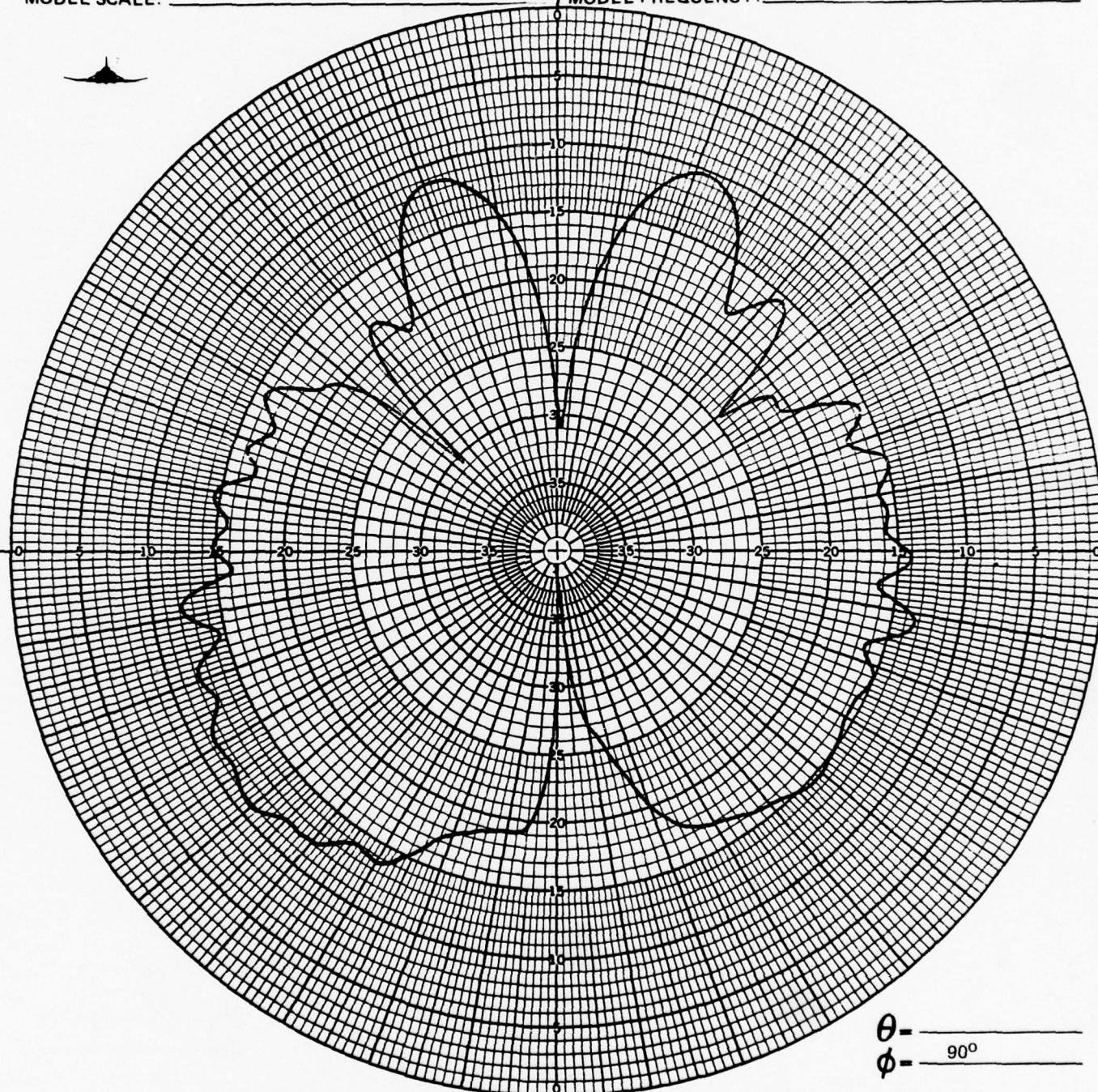
ANTENNA LOCATION: FINCAP

MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)

FULL SCALE FREQUENCY: 145 MHz

MODEL FREQUENCY: 725 MHz



θ - _____
 ϕ - 90°

CONFIGURATION: 24

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM

DATE: 3-29-77

DOCUMENT _____
REVISION _____

ANTENNA: MODIFIED NADC W/CAP (MED)

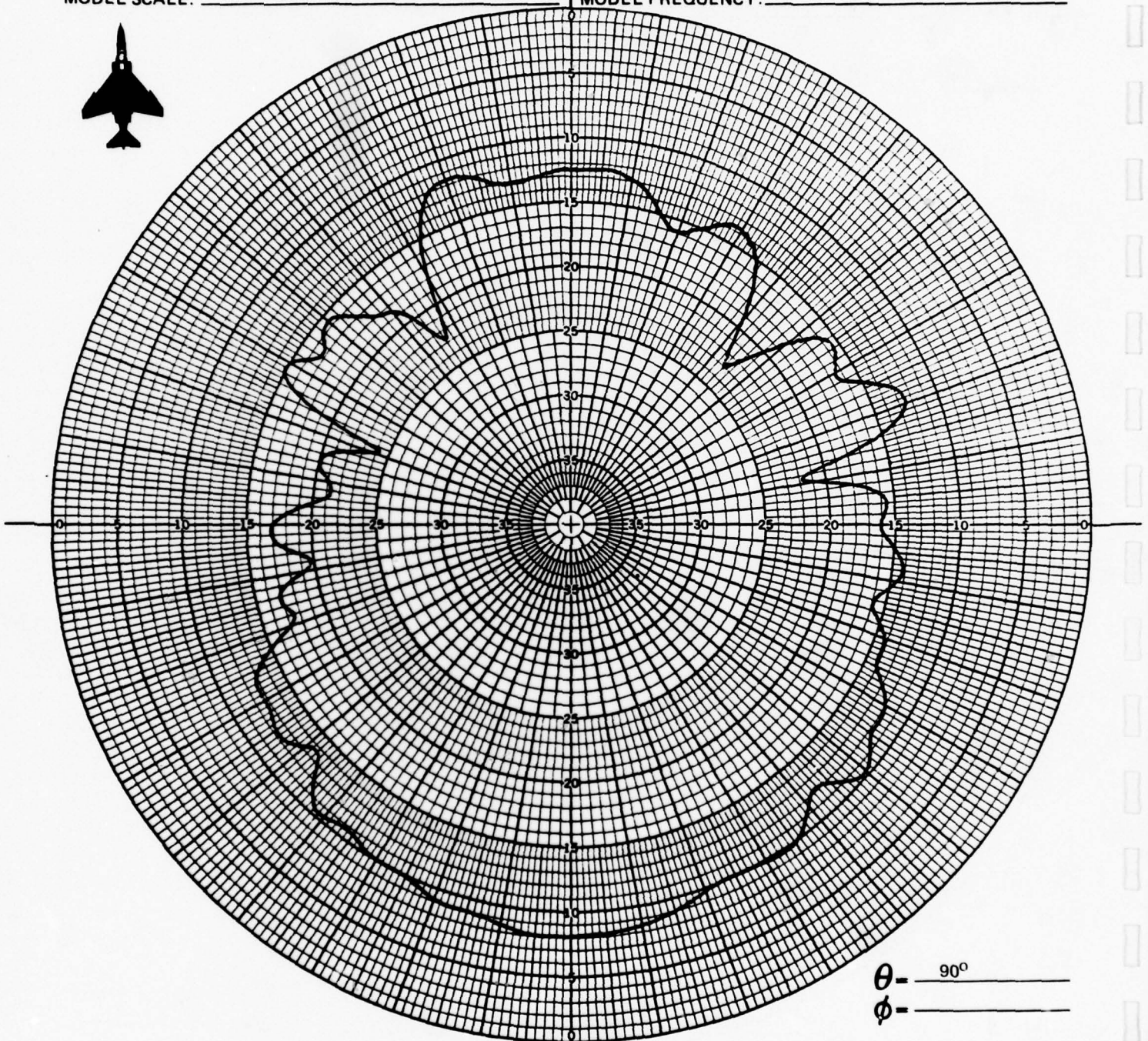
ANTENNA LOCATION: FINCAP

MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)

FULL SCALE FREQUENCY: 145 MHz

MODEL FREQUENCY: 725 MHz



θ - 90°
 ϕ - _____

CONFIGURATION: 24

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM

DATE: 3-29-77

DOCUMENT _____
REVISION _____

ANTENNA: MODIFIED NADC W/CAP (MED)

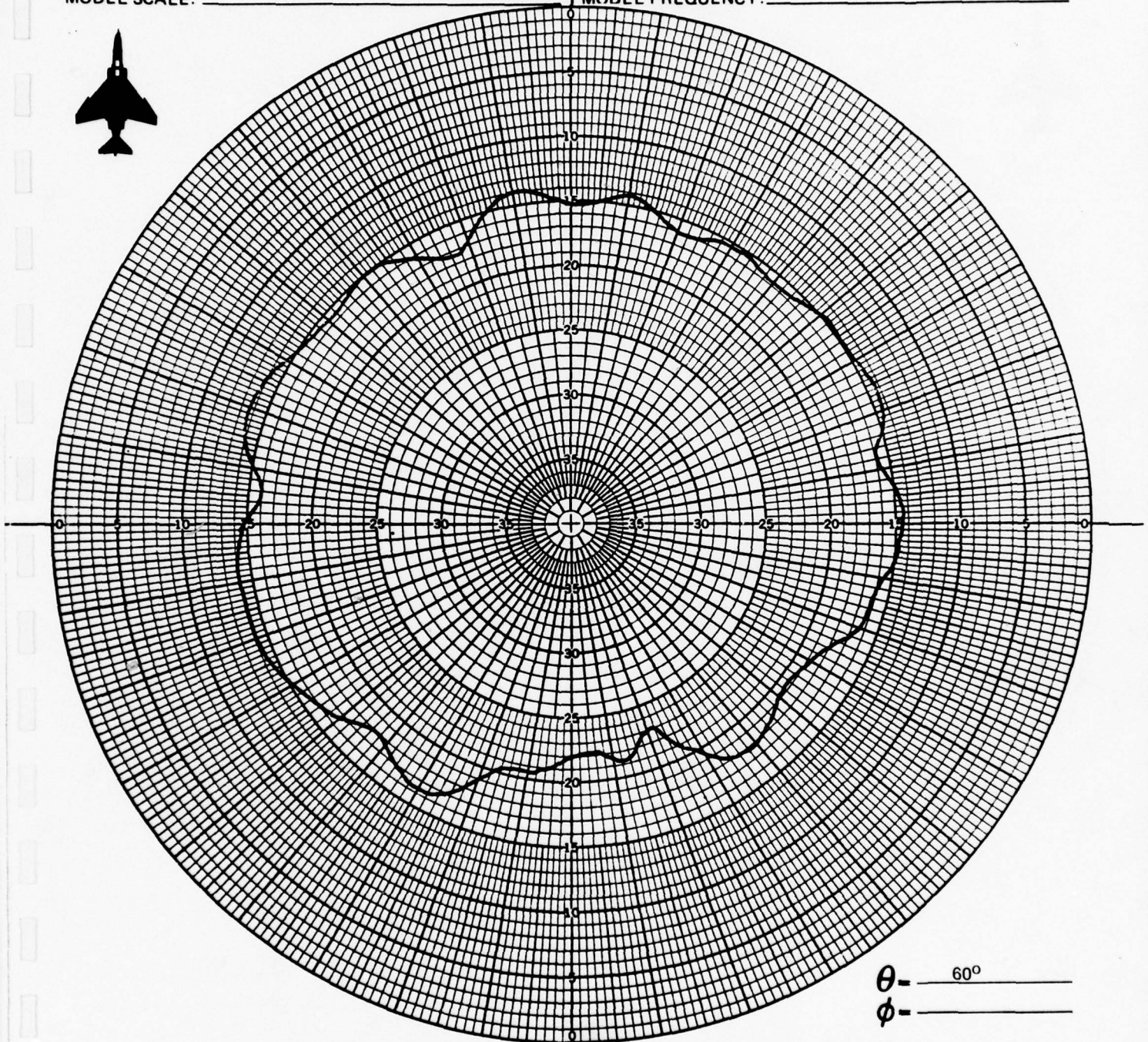
ANTENNA LOCATION: FINCAP

MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)

FULL SCALE FREQUENCY: 145 MHz

MODEL FREQUENCY: 725 MHz



θ - 60°
 ϕ - _____

CONFIGURATION: 24

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM

DATE: 3-29-77

DOCUMENT _____
REVISION _____

ANTENNA: MODIFIED NADC W/CAP (MED)

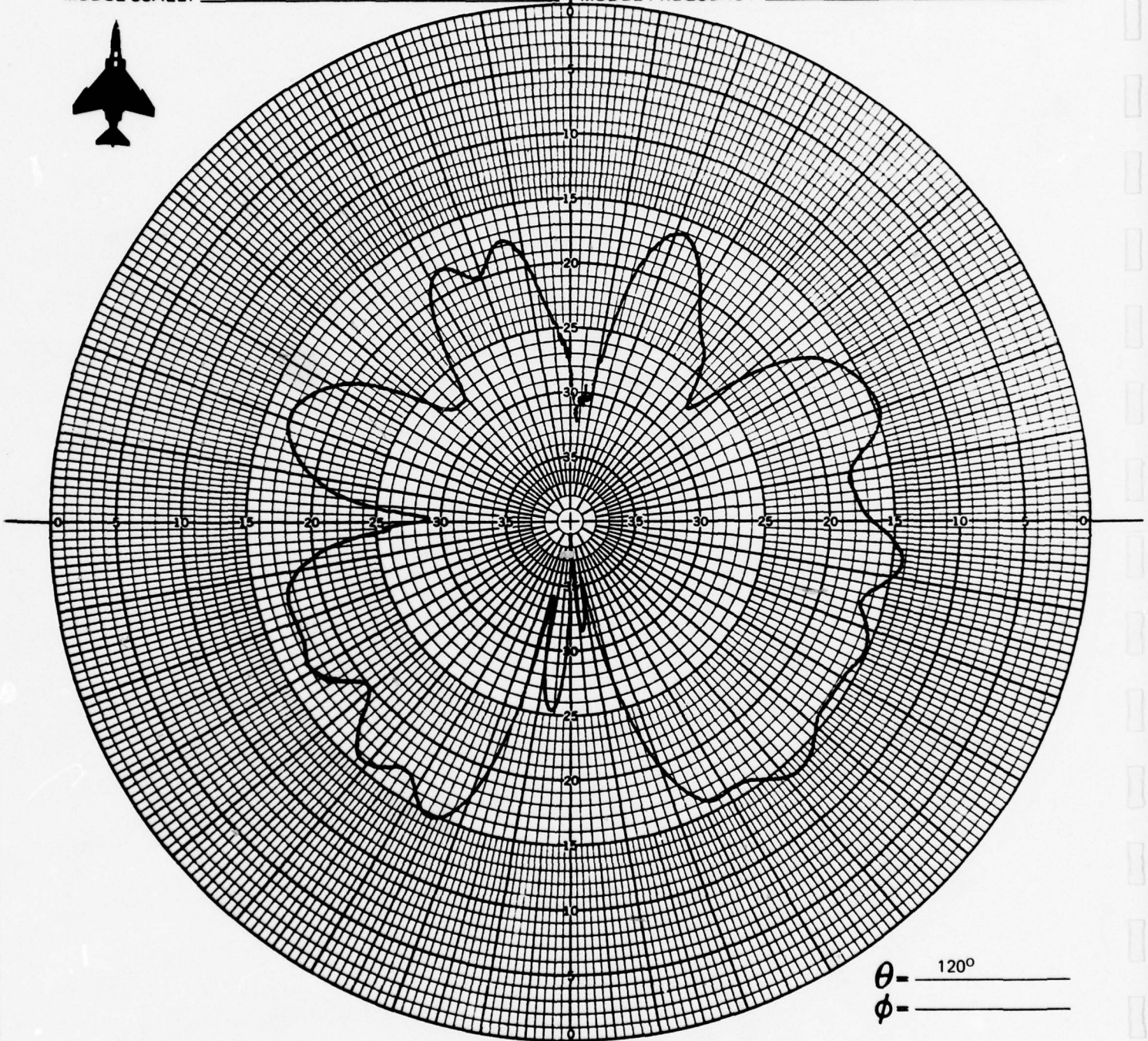
ANTENNA LOCATION: FINCAP

MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)

FULL SCALE FREQUENCY: 145 MHz

MODEL FREQUENCY: 725 MHz



θ - 120°
 ϕ - _____

CONFIGURATION: 24

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: E ϕ ☒ E θ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM

DATE: 3-29-77

DOCUMENT _____
REVISION _____

ANTENNA: MODIFIED NADC W/CAP (MED)

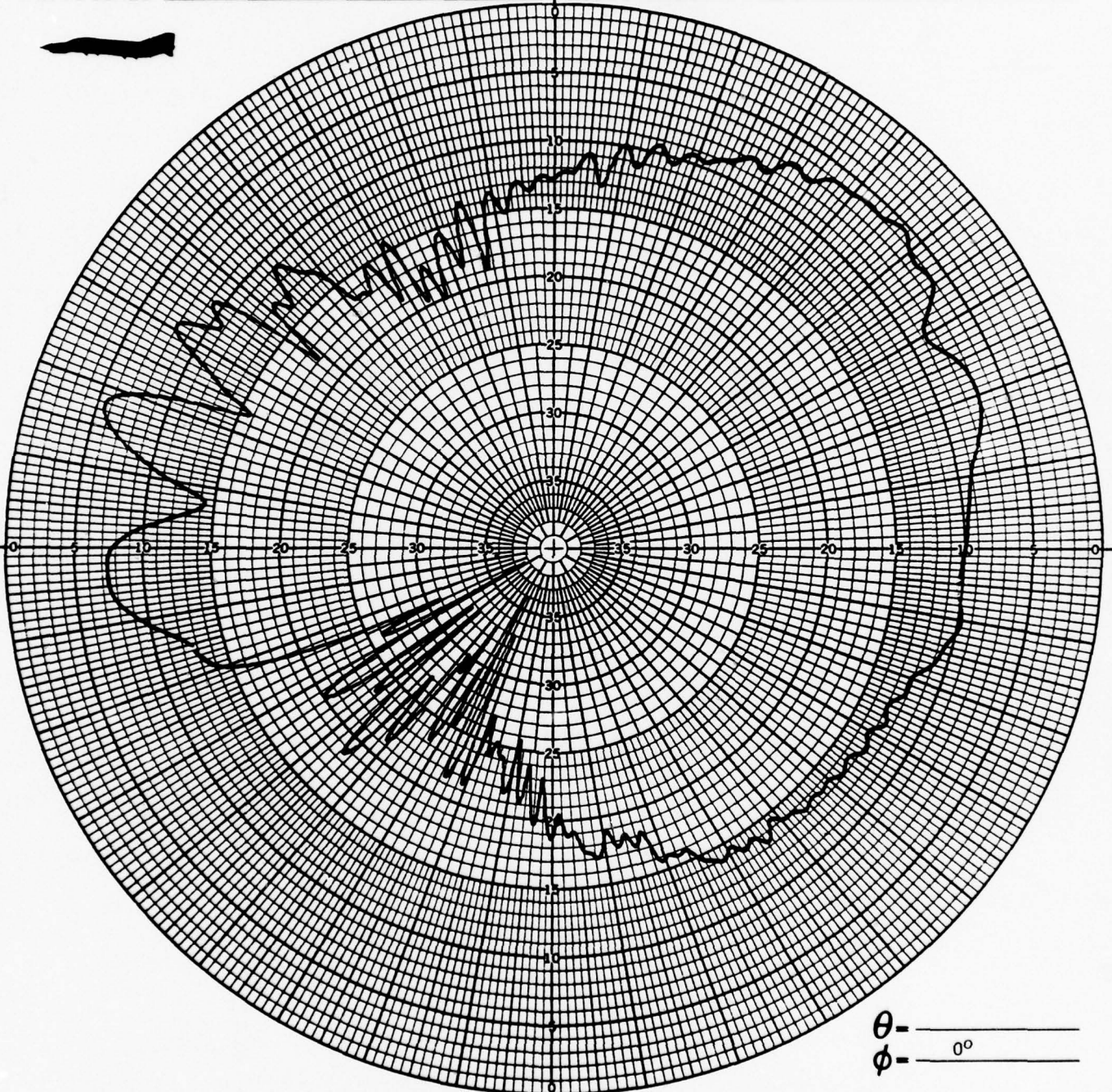
ANTENNA LOCATION: FINCAP

MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)

FULL SCALE FREQUENCY: 325 MHz

MODEL FREQUENCY: 1625 MHz



θ - _____
 ϕ - 0°

CONFIGURATION: 24

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: 285 FT

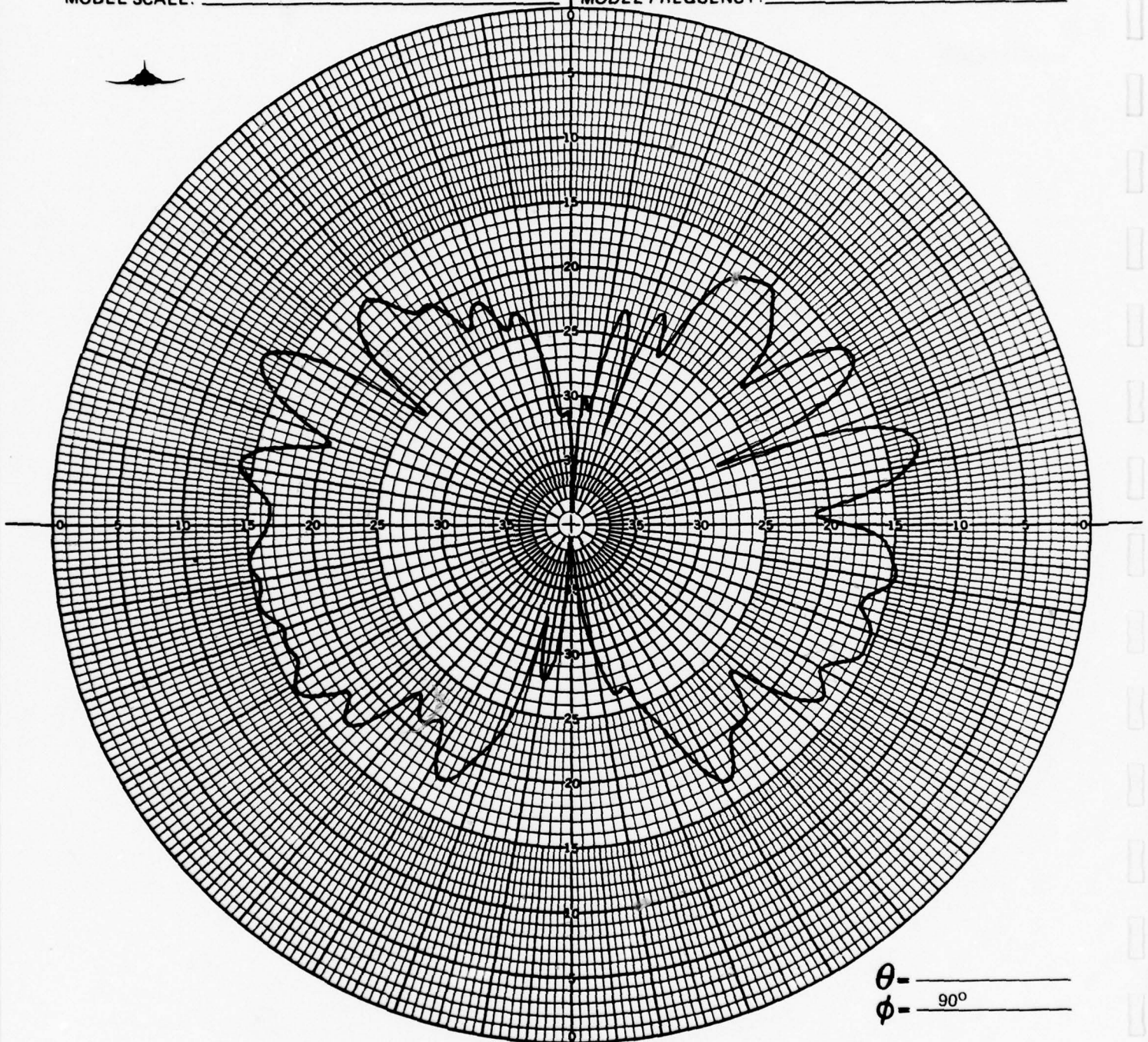
OBSERVER: PN, BM

DATE: 3-29-77

DOCUMENT _____
REVISION _____

ANTENNA: MODIFIED NADC W/CAP (MED)
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 325 MHz
MODEL FREQUENCY: 1625 MHz



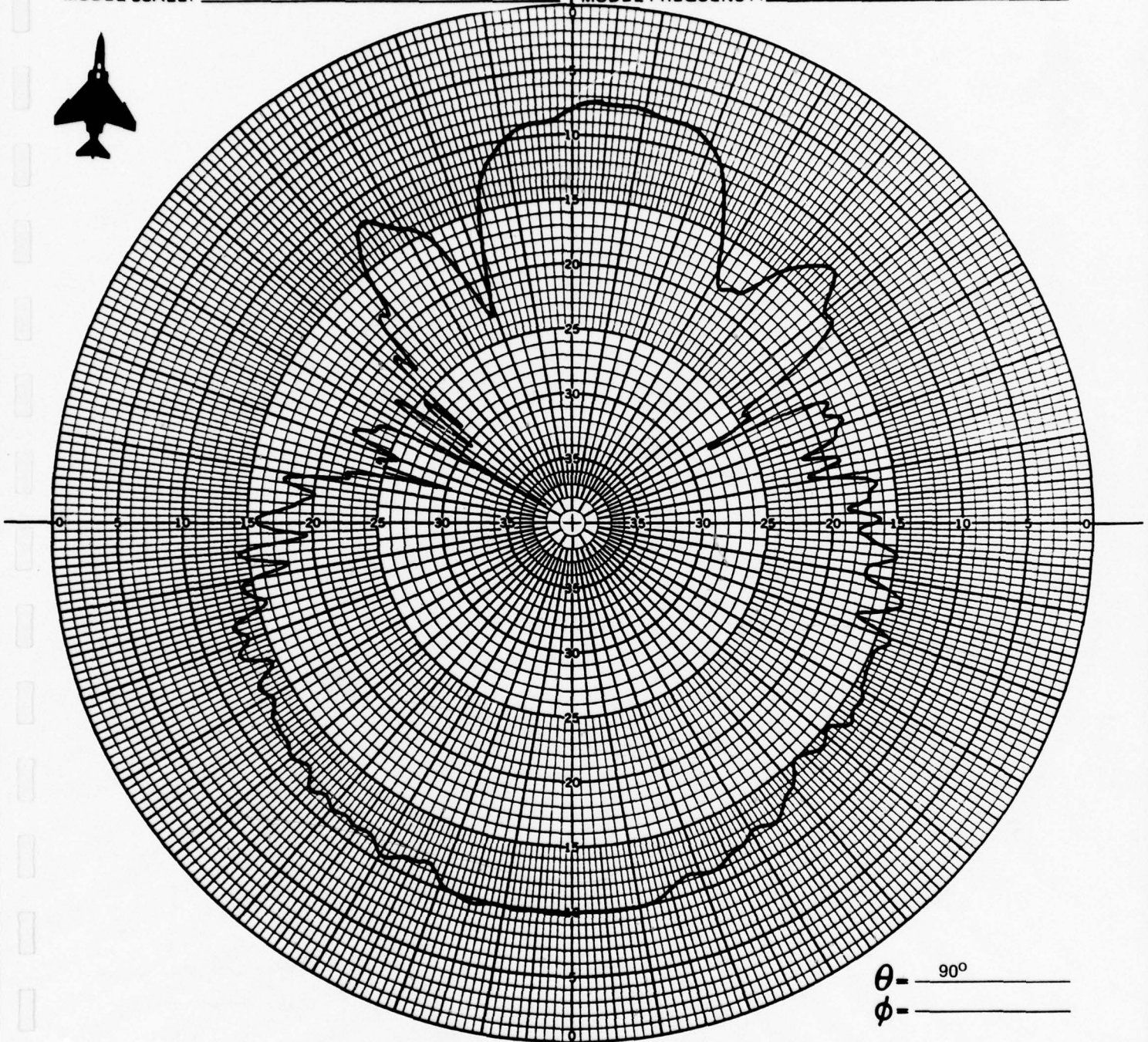
CONFIGURATION: 24
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: ☒ E ϕ ☐ E θ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: 285 FT
OBSERVER: PN, BM DATE: 3-29-77

DOCUMENT _____
REVISION _____

ANTENNA: MODIFIED NADC W/CAP (MED)
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 325 MHz
MODEL FREQUENCY: 1625 MHz



θ - 90°
 ϕ - _____

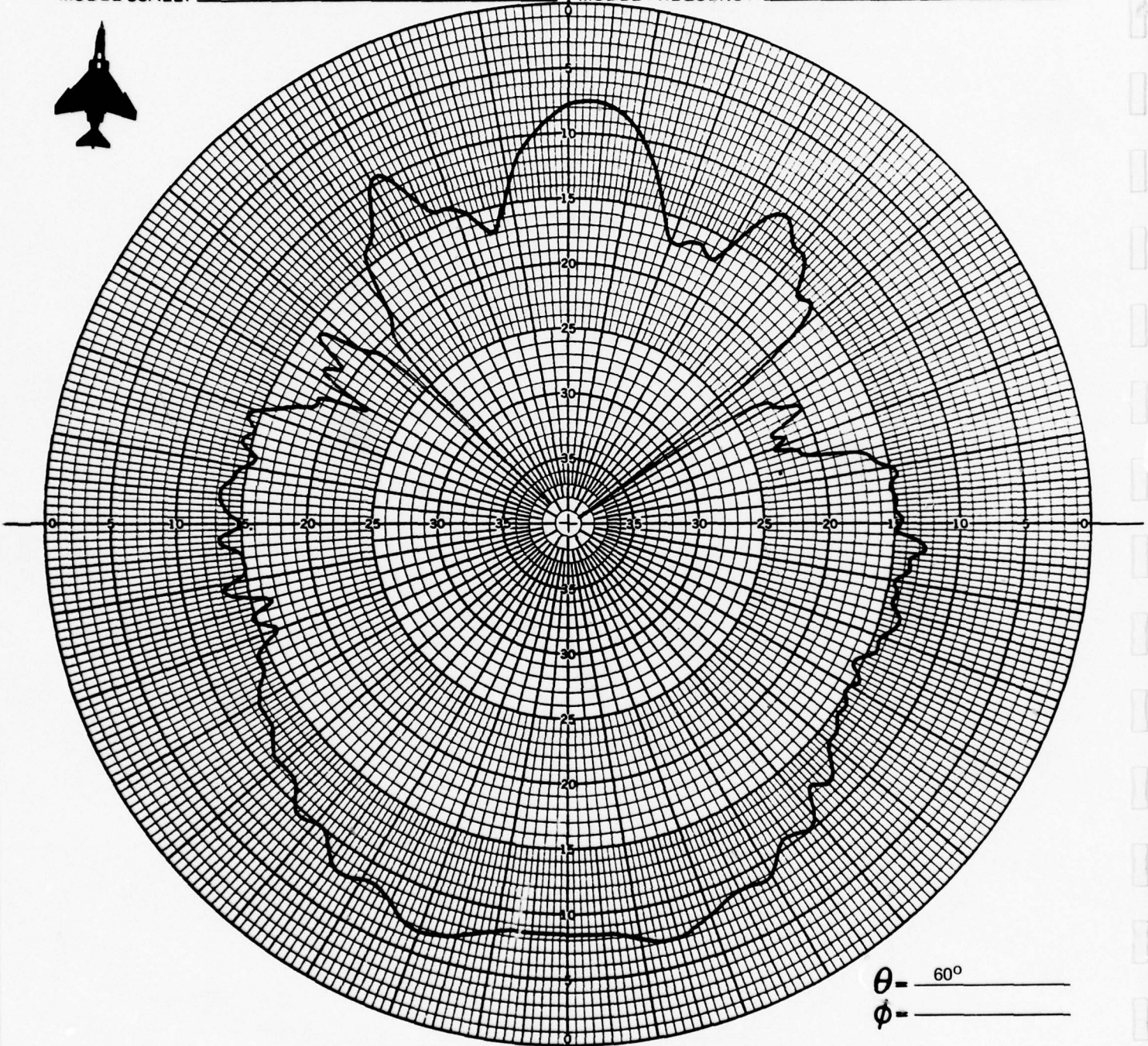
CONFIGURATION: 24
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: ☒ E ☐ ϕ ☐ E θ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: 285 FT
OBSERVER: PN, BM DATE: 3-29-77

DOCUMENT _____
REVISION _____

ANTENNA: MODIFIED NADC W/CAP (MED)
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 325 MHz
MODEL FREQUENCY: 1625 MHz



θ - 60°
 ϕ - _____

CONFIGURATION: 24

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

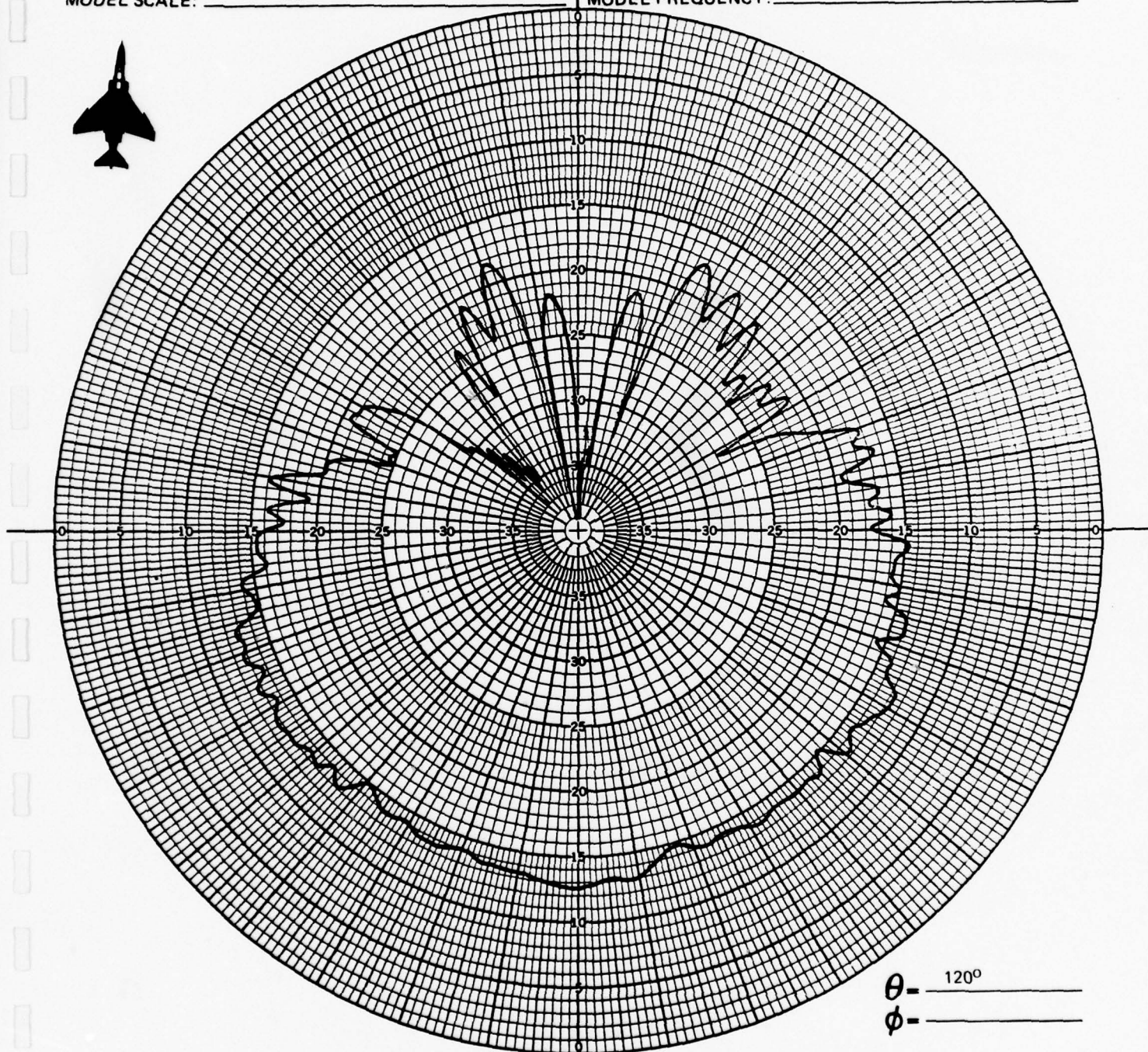
TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 3-29-77

DOCUMENT _____
REVISION _____

ANTENNA: MODIFIED NADC W/CAP (MED)
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 325 MHz
MODEL FREQUENCY: 1625 MHz



θ - 120°
 ϕ - _____

CONFIGURATION: 24

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: ☒ $E\phi$ ☐ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

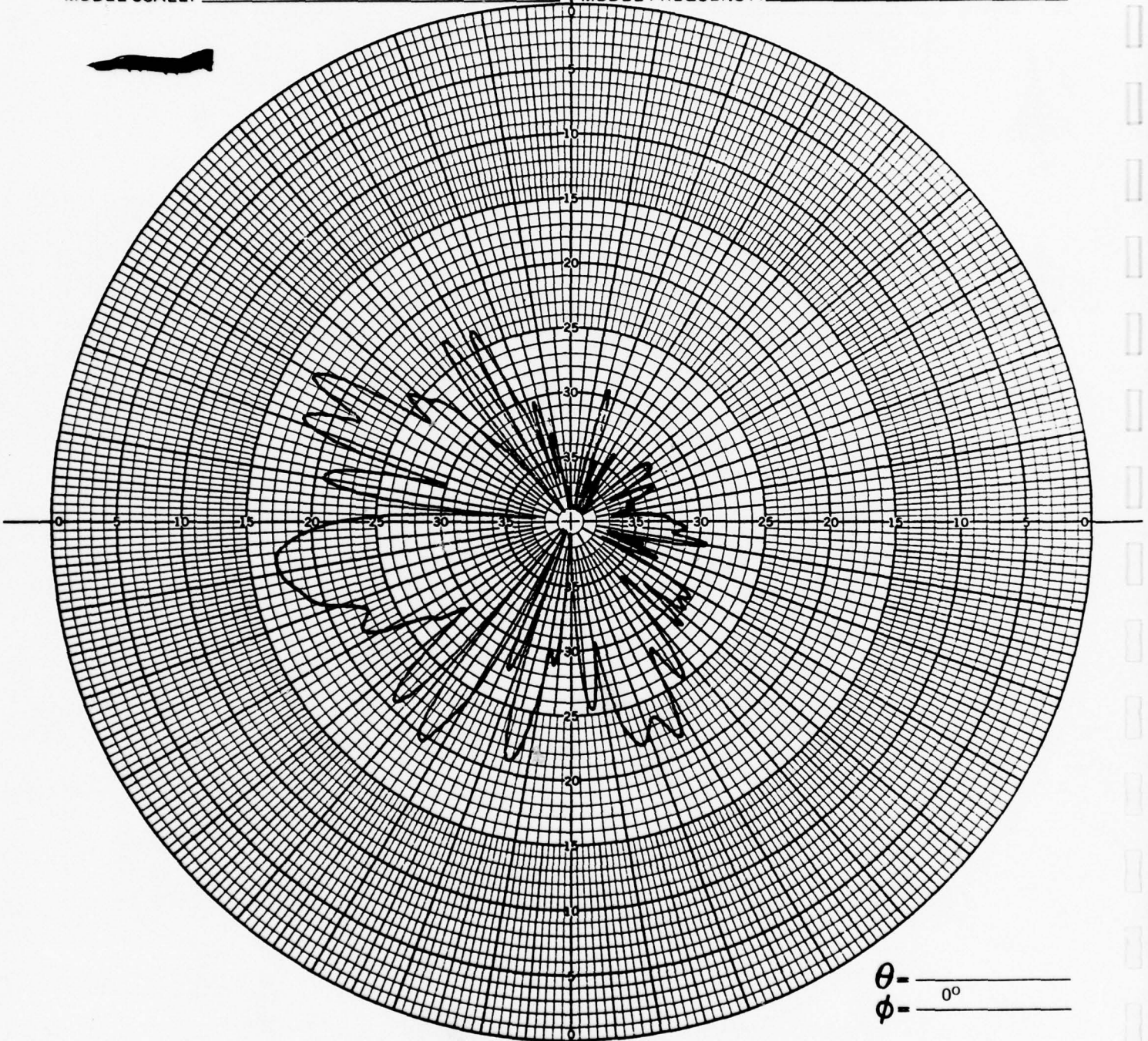
TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 3-29-77

DOCUMENT _____
REVISION _____

ANTENNA: MODIFIED NADC W/CAP (MED)
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 325 MHz
MODEL FREQUENCY: 1625 MHz



θ - _____
 ϕ - 0°

CONFIGURATION: 24

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

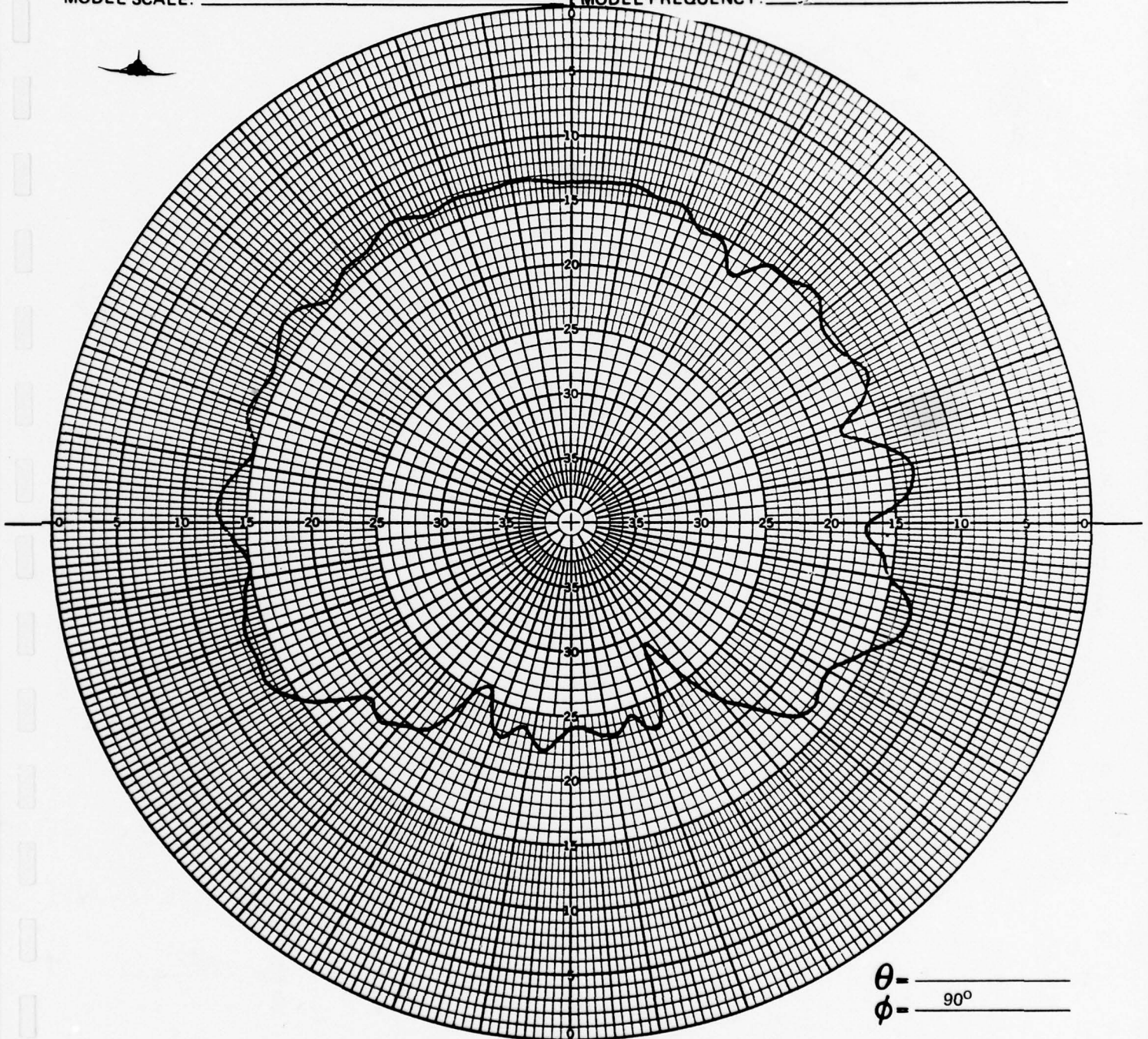
TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 3-29-77

DOCUMENT _____
REVISION _____

ANTENNA: MODIFIED NADC W/CAP (MED)
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 325 MHz
MODEL FREQUENCY: 1625 MHz



θ - _____
 ϕ - 90°

CONFIGURATION: 24

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 3-29-77

DOCUMENT _____
REVISION _____

ANTENNA: MODIFIED NADC W/CAP (MED)

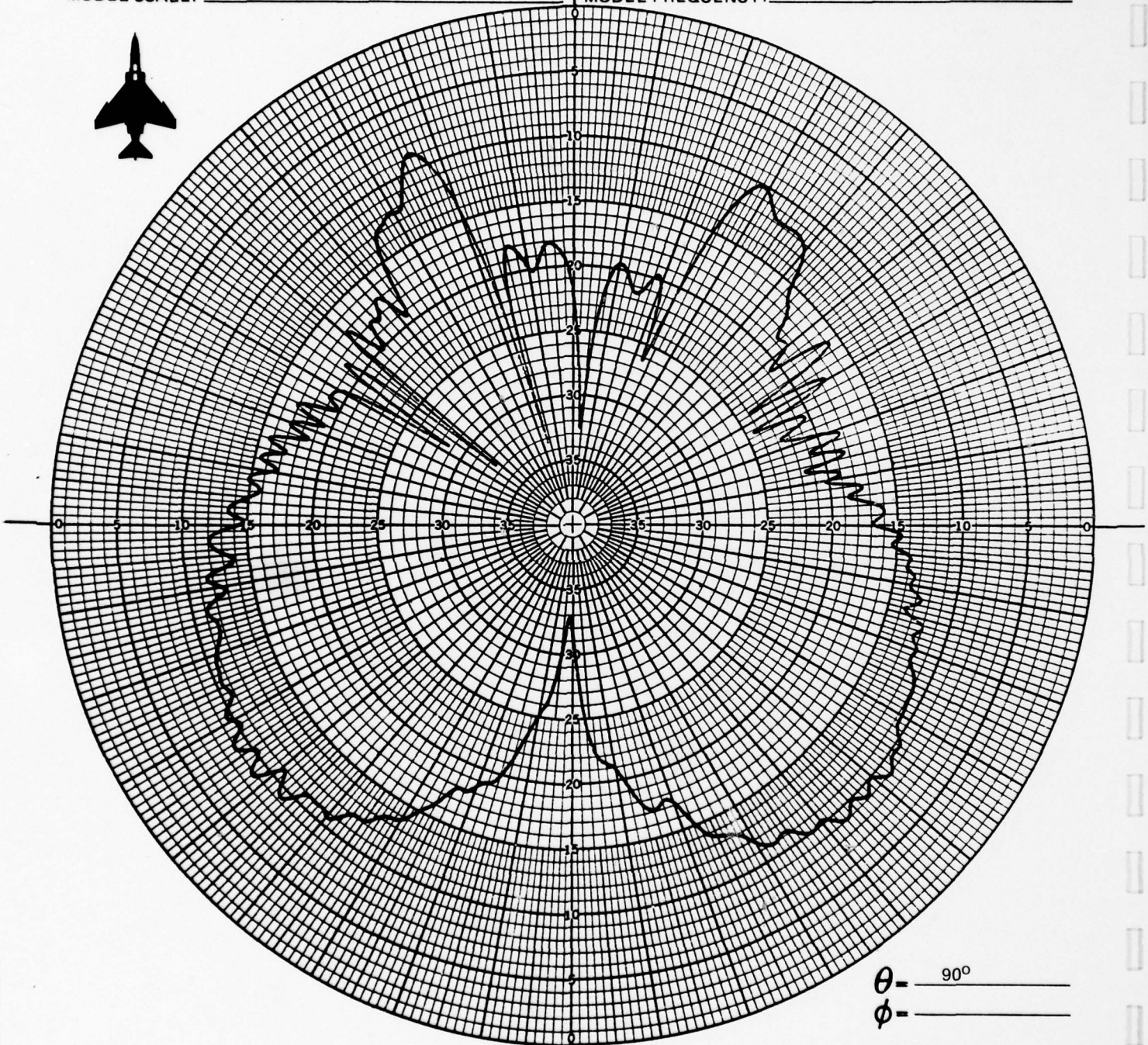
ANTENNA LOCATION: FINCAP

MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)

FULL SCALE FREQUENCY: 325 MHz

MODEL FREQUENCY: 1625 MHz



θ = 90°
 ϕ = _____

CONFIGURATION: 24

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

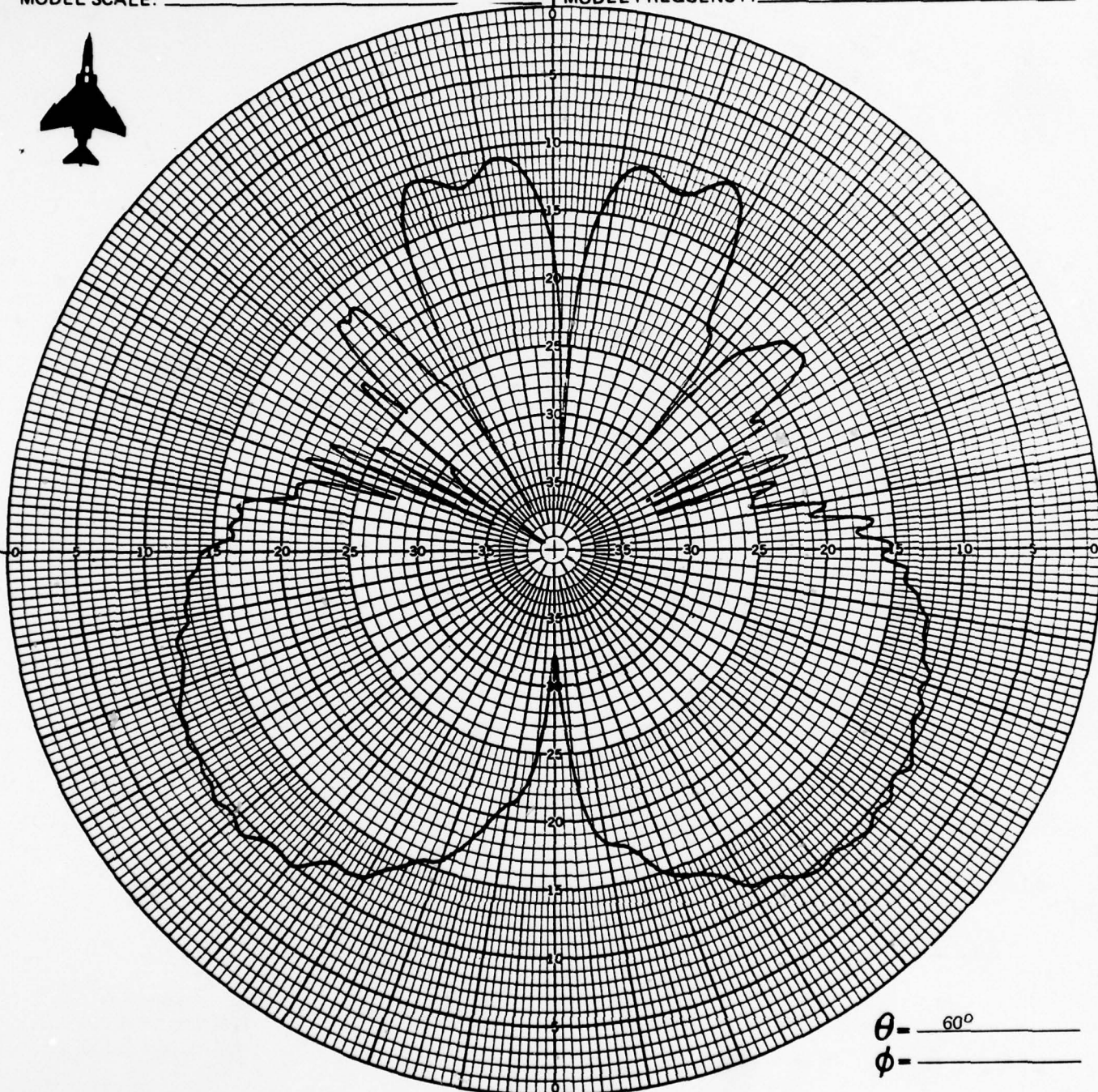
TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 3-29-77

DOCUMENT _____
REVISION _____

ANTENNA: MODIFIED NADC W/CAP (MED)
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 325 MHz
MODEL FREQUENCY: 1625 MHz



θ - 60°
 ϕ - _____

CONFIGURATION: 24

REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: 285 FT
OBSERVER: PN, BM DATE: 3-29-77

DOCUMENT _____
REVISION _____

ANTENNA: MODIFIED NADC W/CAP (MED)

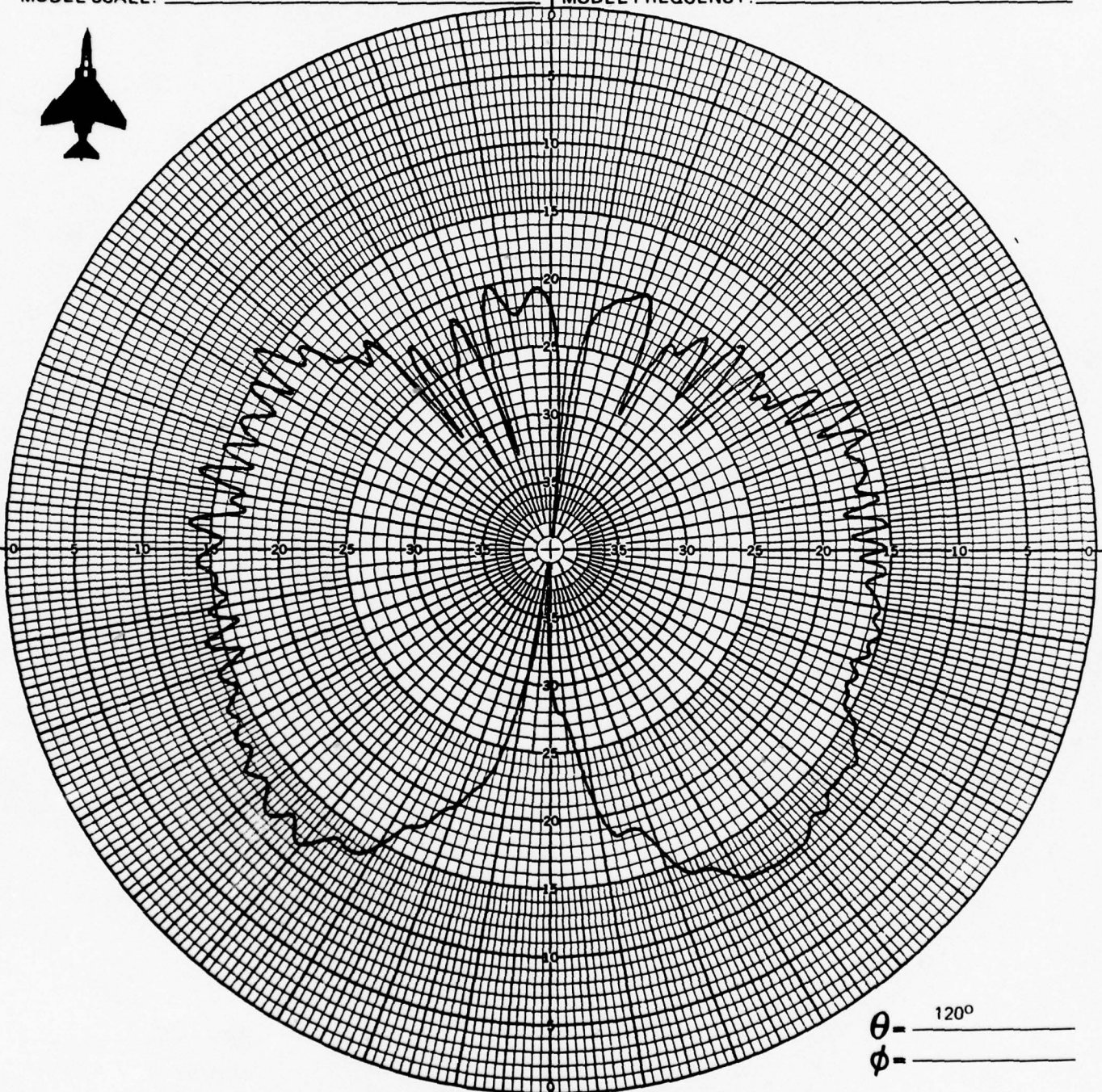
TEST IDENT.: 703-174 (F-4)

ANTENNA LOCATION: FINCAP

FULL SCALE FREQUENCY: 325 MHz

MODEL SCALE: 1/5

MODEL FREQUENCY: 1625 MHz



θ - 120°
 ϕ - _____

CONFIGURATION: 24

INTEGRATOR COUNT: _____

REMARKS: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 3-29-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE

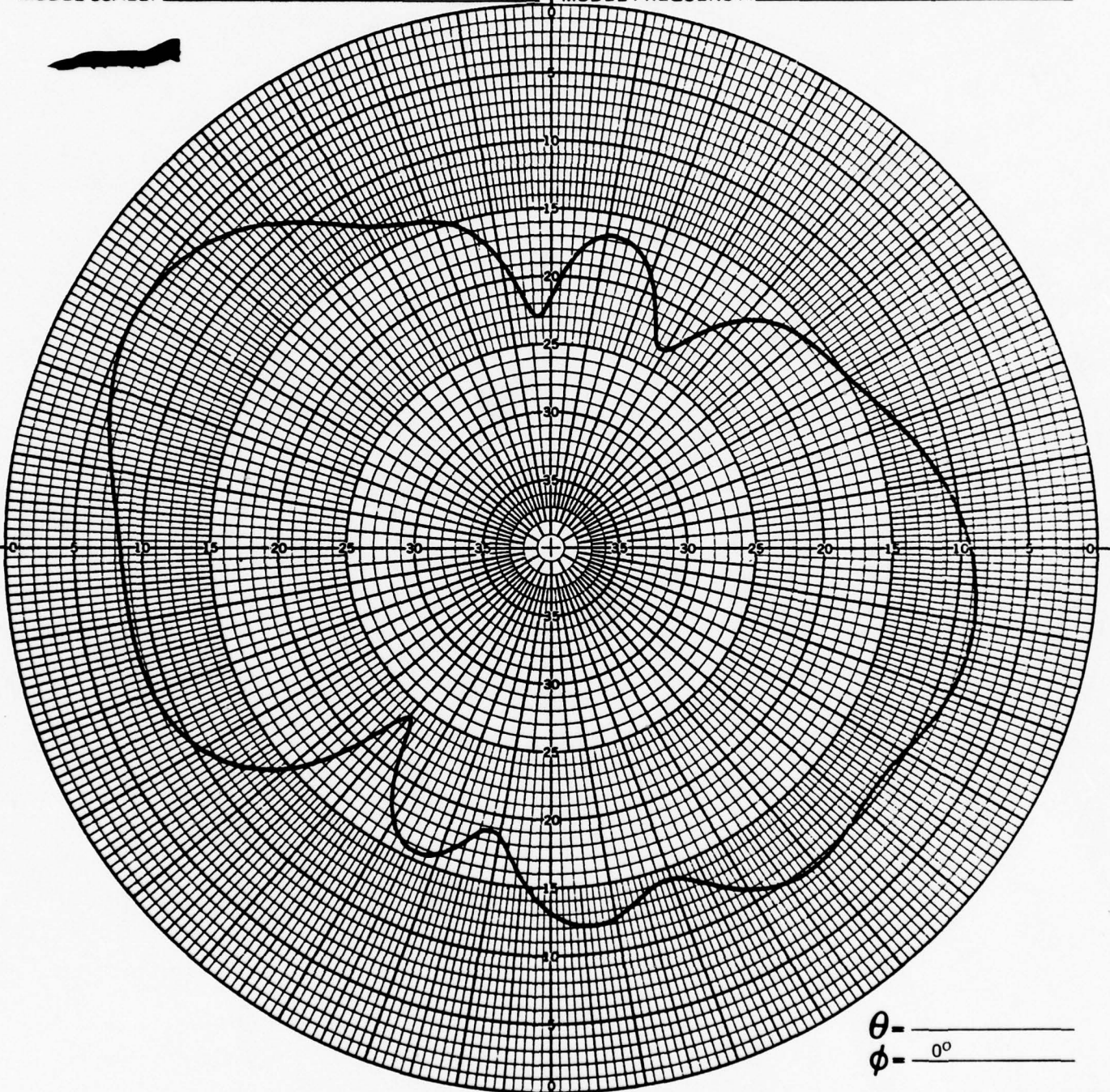
ANTENNA LOCATION: FINCAP

MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)

FULL SCALE FREQUENCY: 33 MHz

MODEL FREQUENCY: 165 MHz



CONFIGURATION: 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

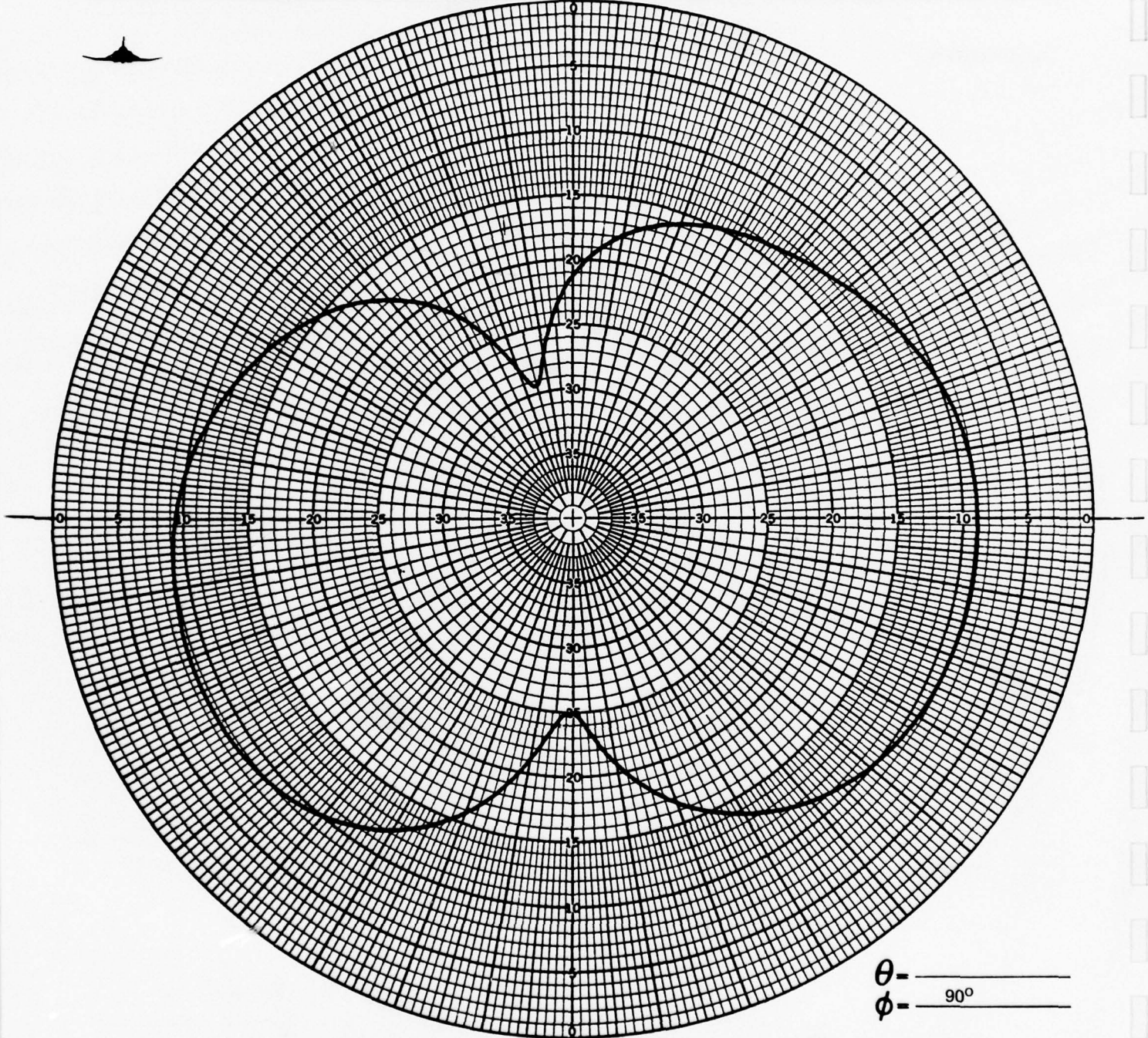
TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 4-22-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 33 MHz
MODEL FREQUENCY: 165 MHz



θ - _____
 ϕ - 90°

CONFIGURATION: 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 4-22-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE

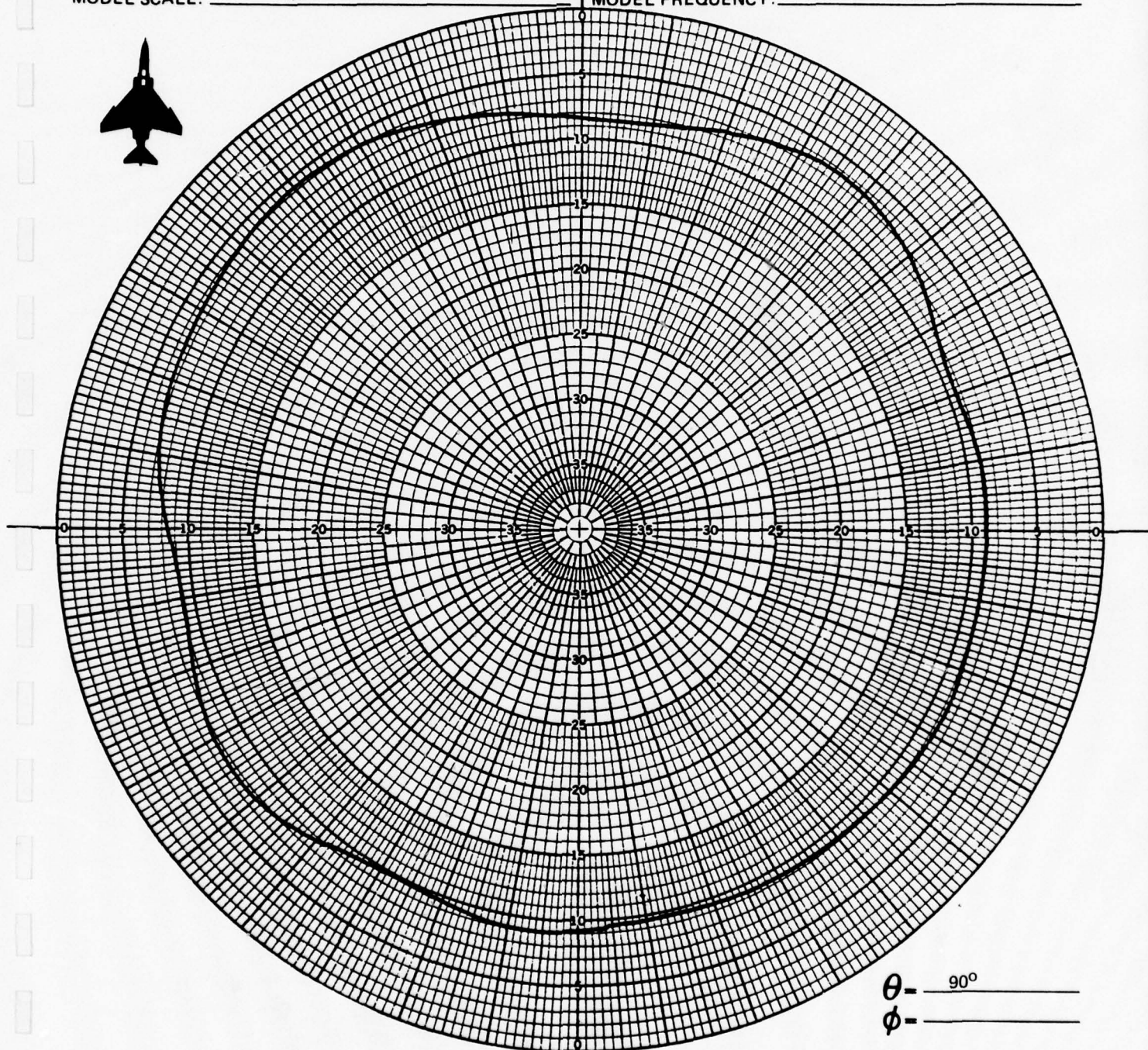
ANTENNA LOCATION: _____ FINCAP

MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)

FULL SCALE FREQUENCY: _____ 33 MHz

MODEL FREQUENCY: _____ 165 MHz



θ - 90°
 ϕ - _____

CONFIGURATION: _____ 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

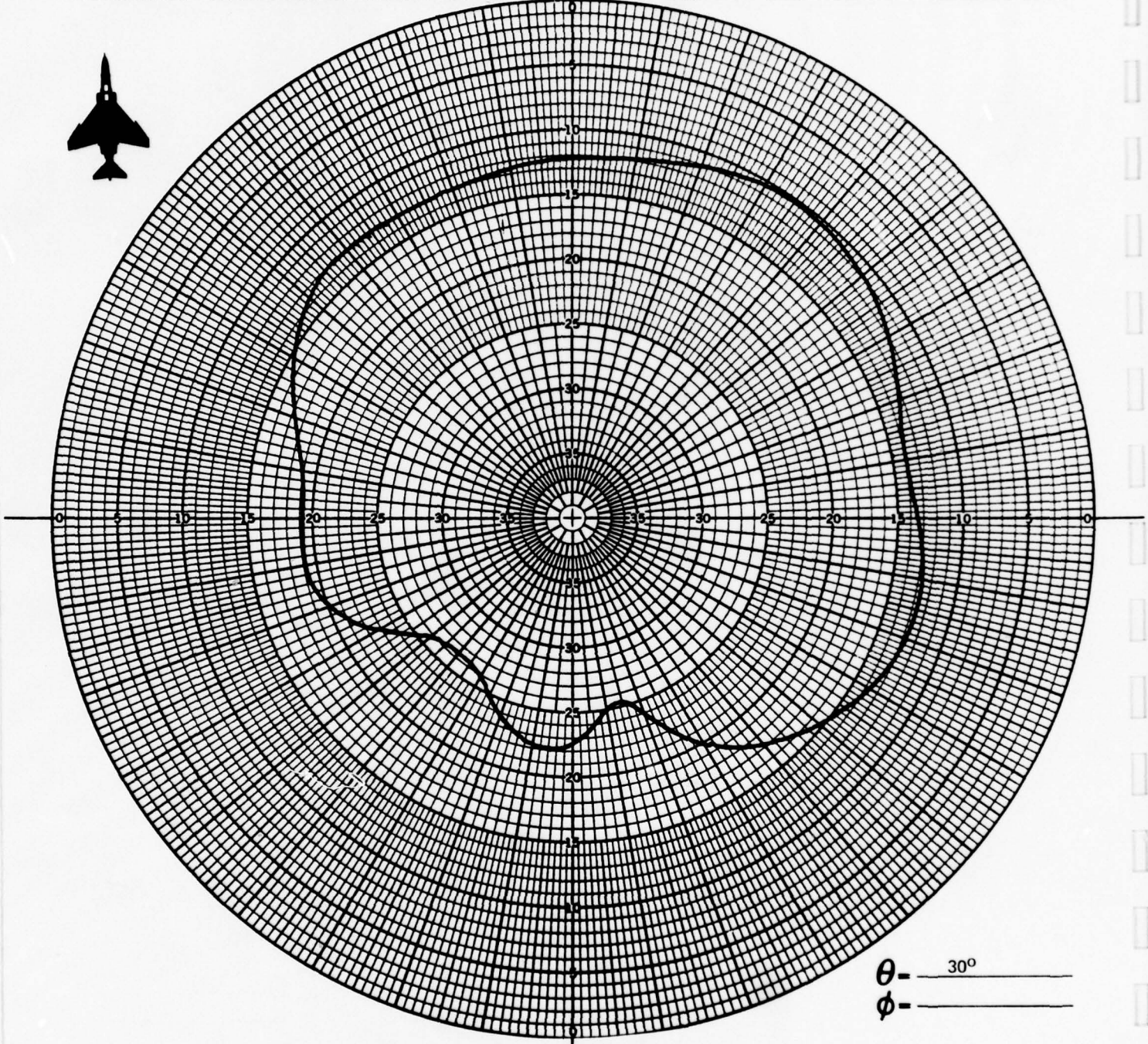
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 4-22-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 33 MHz
MODEL FREQUENCY: _____ 165 MHz



θ - _____ 30°
 ϕ - _____

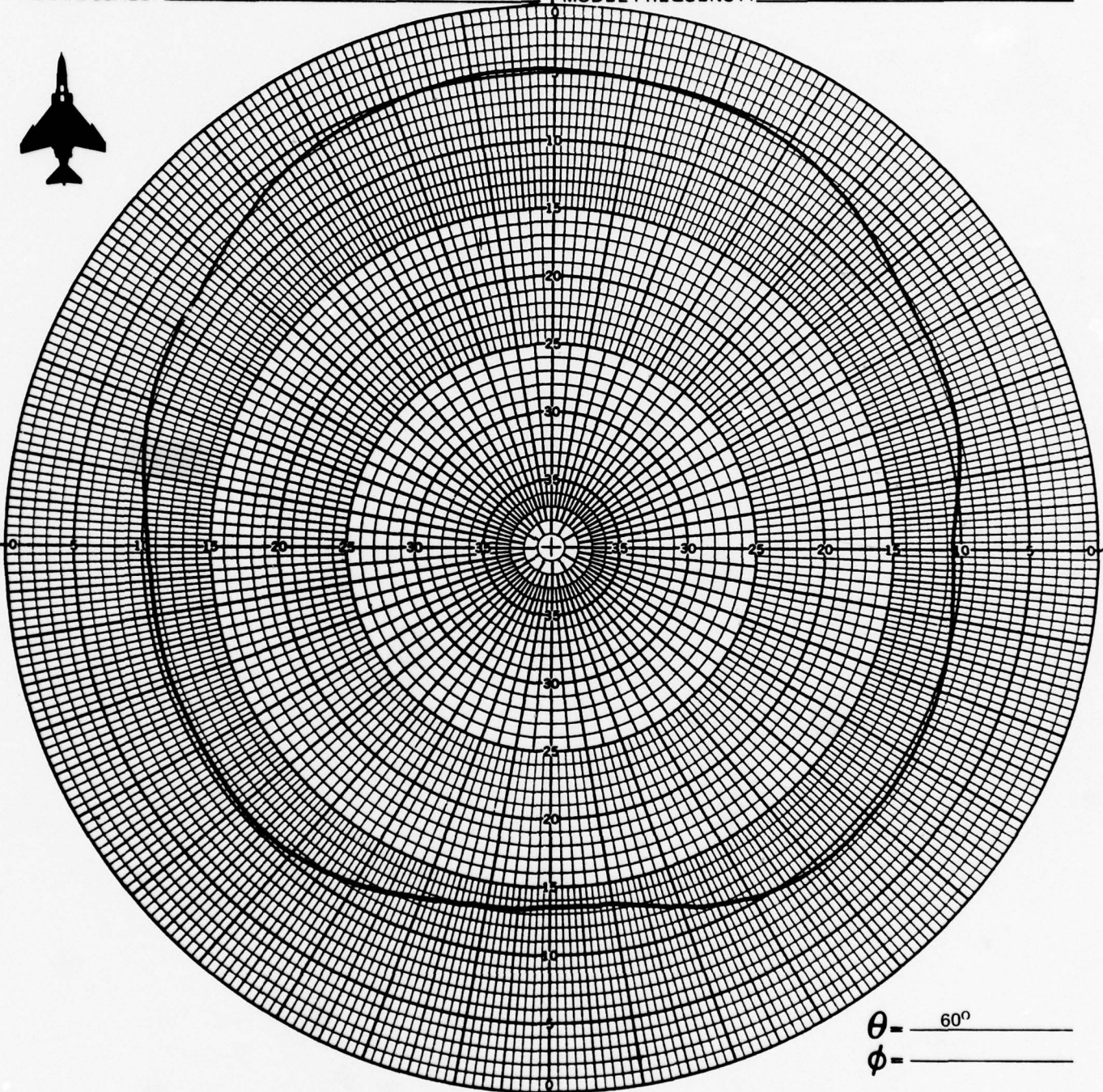
CONFIGURATION: _____ 29
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: _____ 4-22-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 33 MHz
MODEL FREQUENCY: _____ 165 MHz



θ - _____ 60°
 ϕ - _____

CONFIGURATION: _____ 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

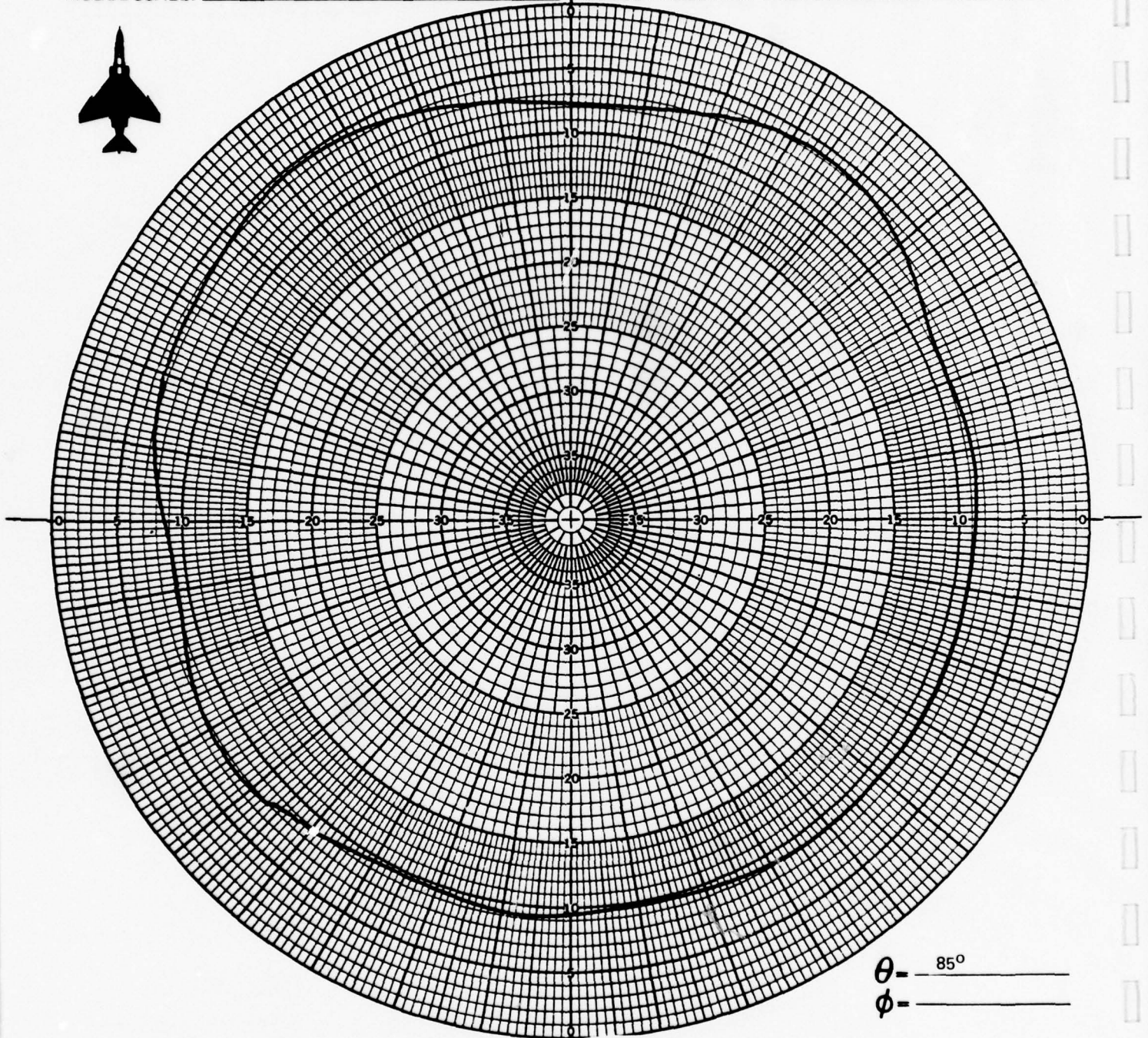
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM _____ DATE: _____ 4-22-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 33 MHz
MODEL FREQUENCY: 165 MHz



θ - 85°
 ϕ - _____

CONFIGURATION: 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: ☒ E ϕ ☐ E θ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

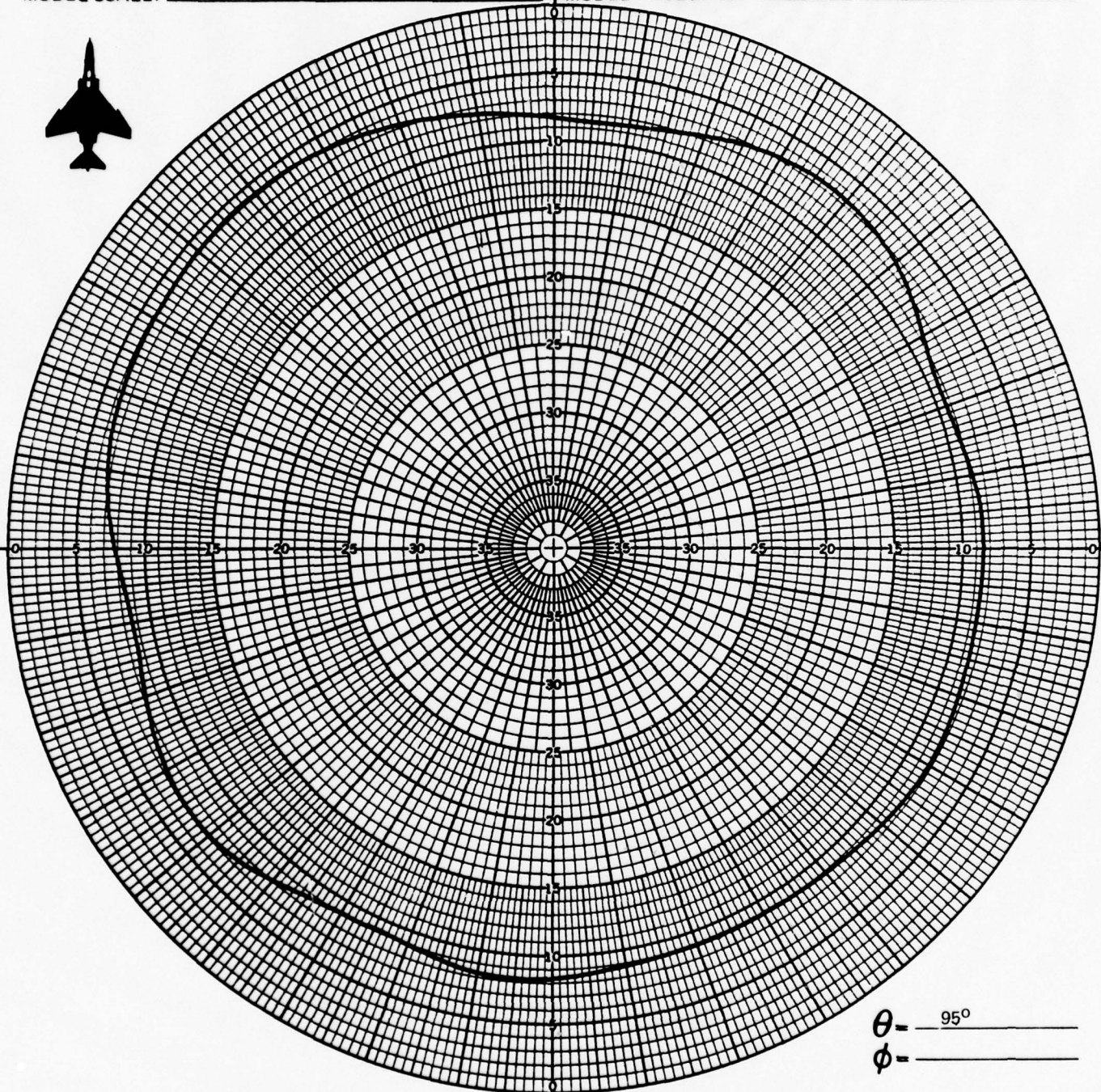
TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 4-22-77

DOCUMENT _____
REV _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 33 MHz
MODEL FREQUENCY: _____ 165 MHz



θ - 95°
 ϕ - _____

CONFIGURATION: _____ 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: E ϕ ☐ E θ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

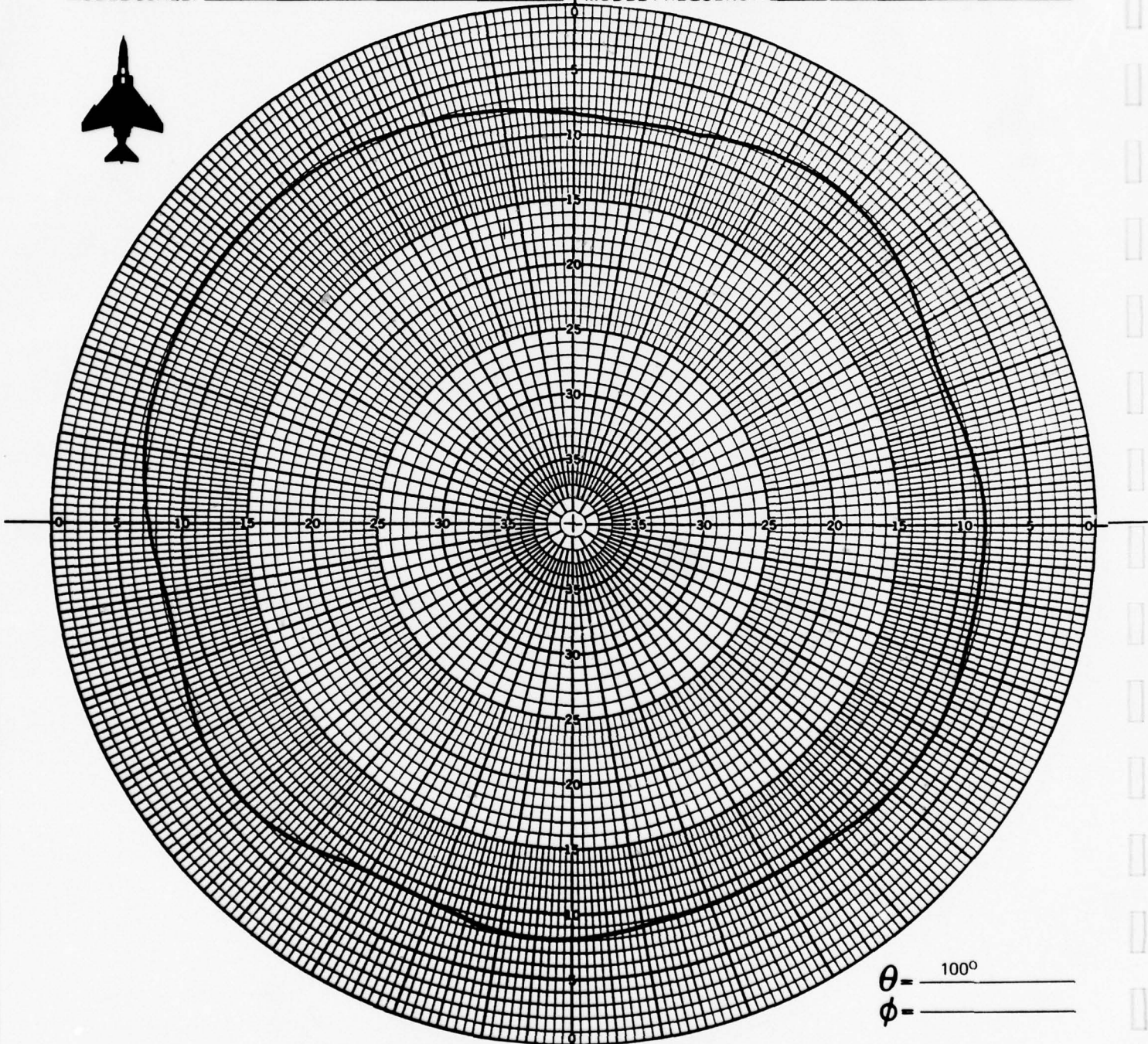
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 4-22-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 33 MHz
MODEL FREQUENCY: _____ 165 MHz



θ = 100°
 ϕ = _____

CONFIGURATION: _____ 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

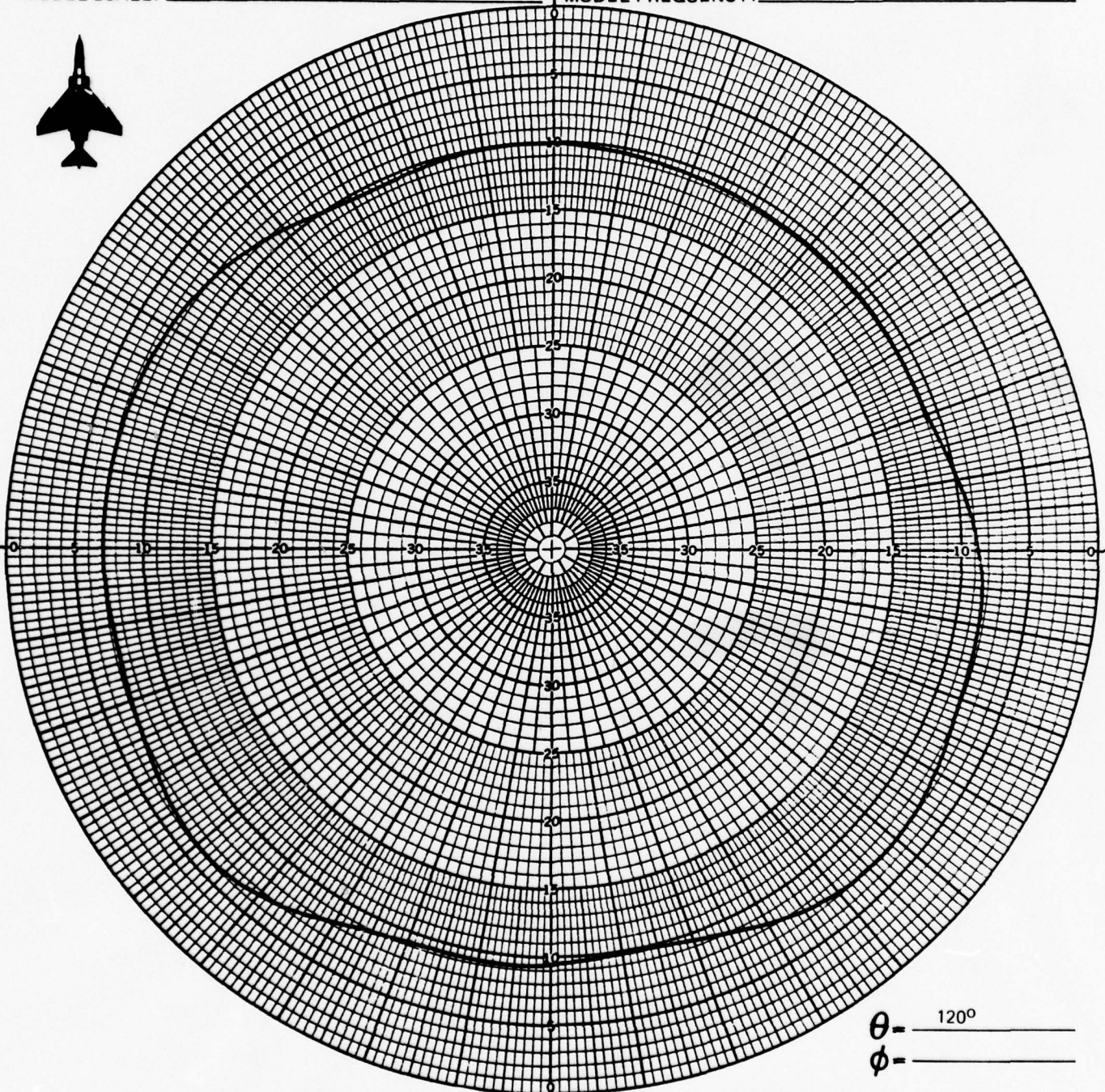
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: 4-22-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 33 MHz
MODEL FREQUENCY: _____ 165 MHz



θ - _____ 120°
 ϕ - _____

CONFIGURATION: _____ 29
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: E ϕ ☐ E θ ☒ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: _____ 4-22-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE

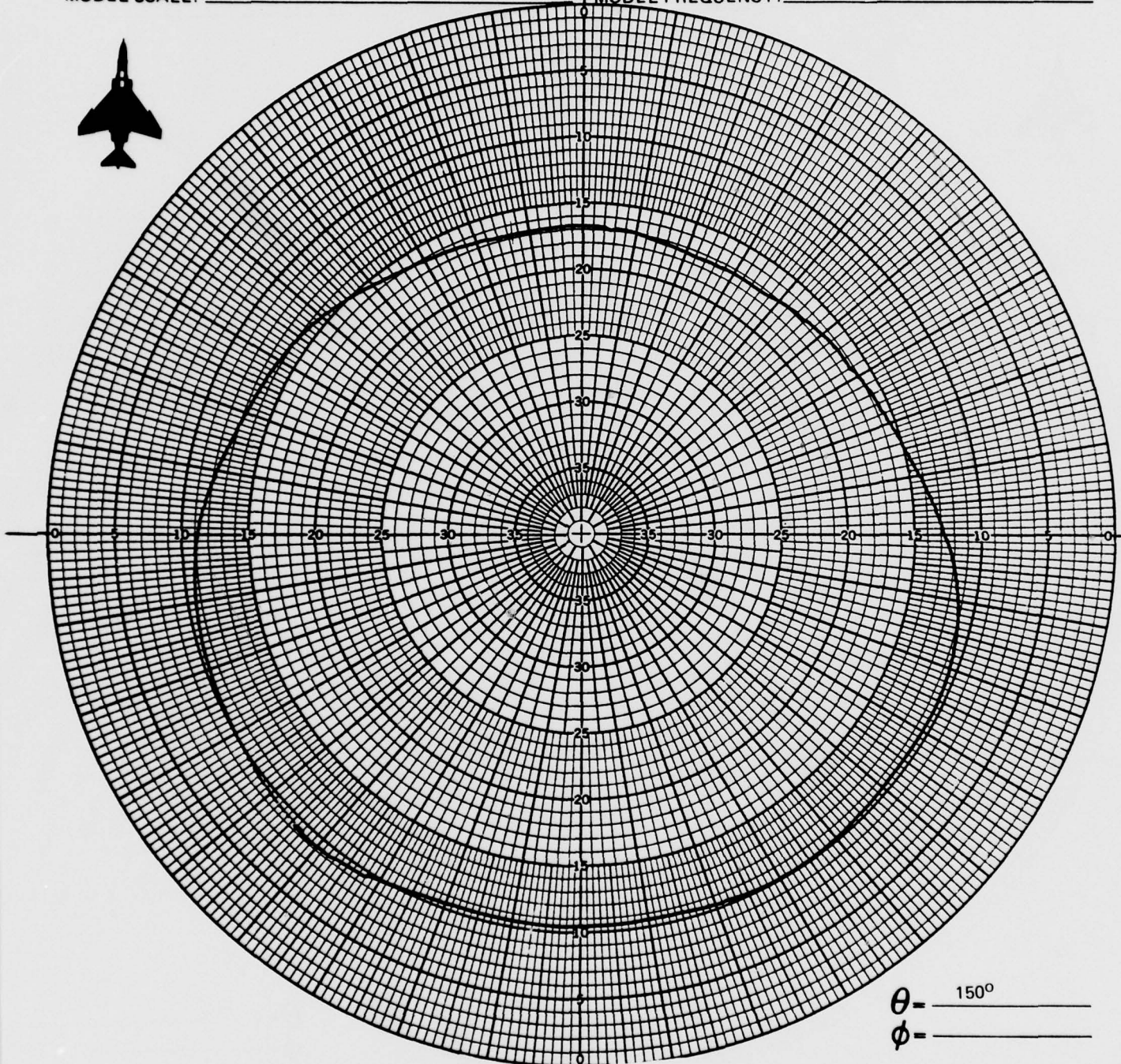
ANTENNA LOCATION: _____ FINCAP

MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)

FULL SCALE FREQUENCY: _____ 33 MHz

MODEL FREQUENCY: _____ 165 MHz



θ = _____ 150°
 ϕ = _____

CONFIGURATION: _____ 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: _____ 285 FT

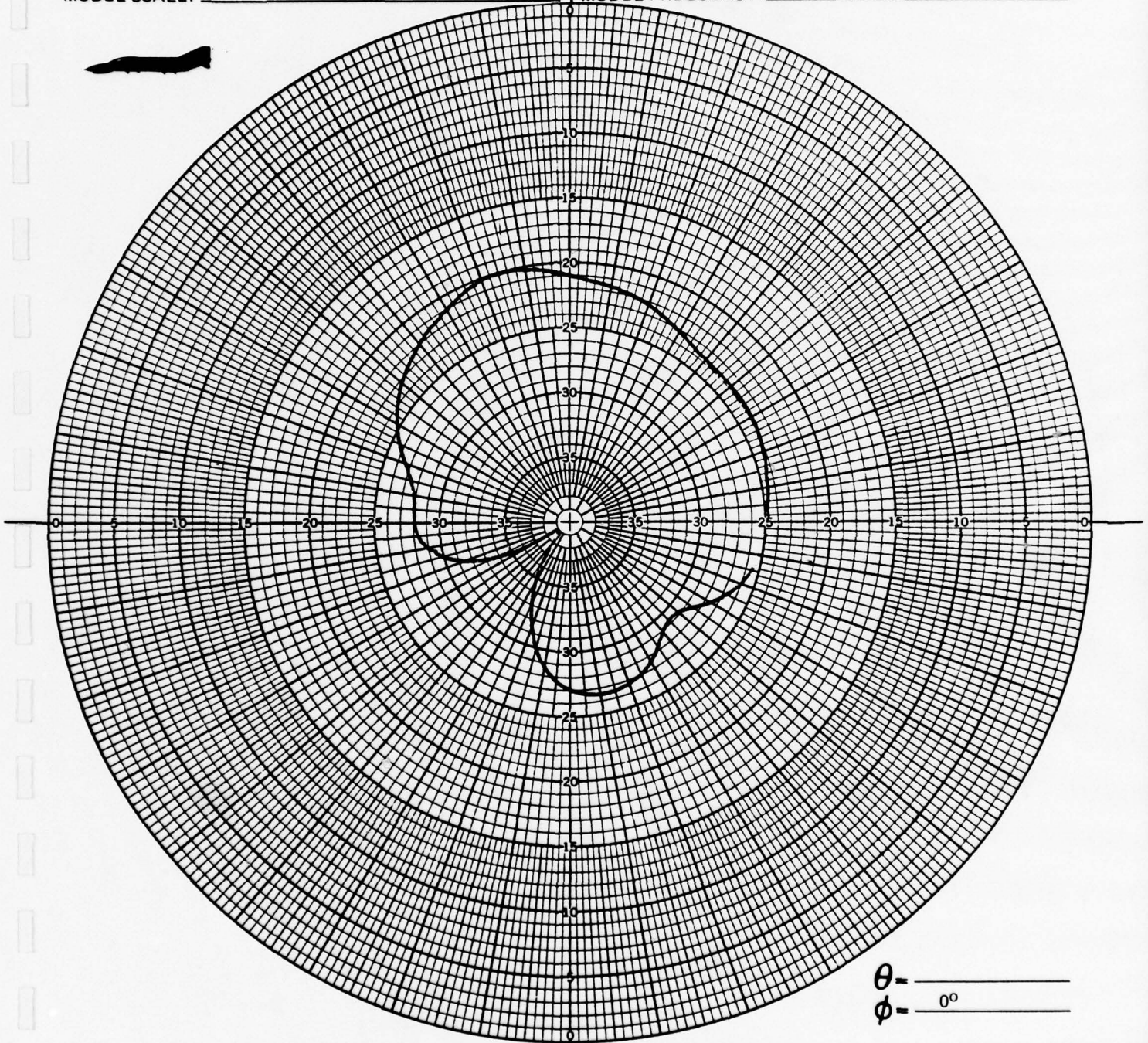
OBSERVER: _____ PN, BM

DATE: _____ 4-22-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 33 MHz
MODEL FREQUENCY: 165 MHz



θ = _____
 ϕ = 0°

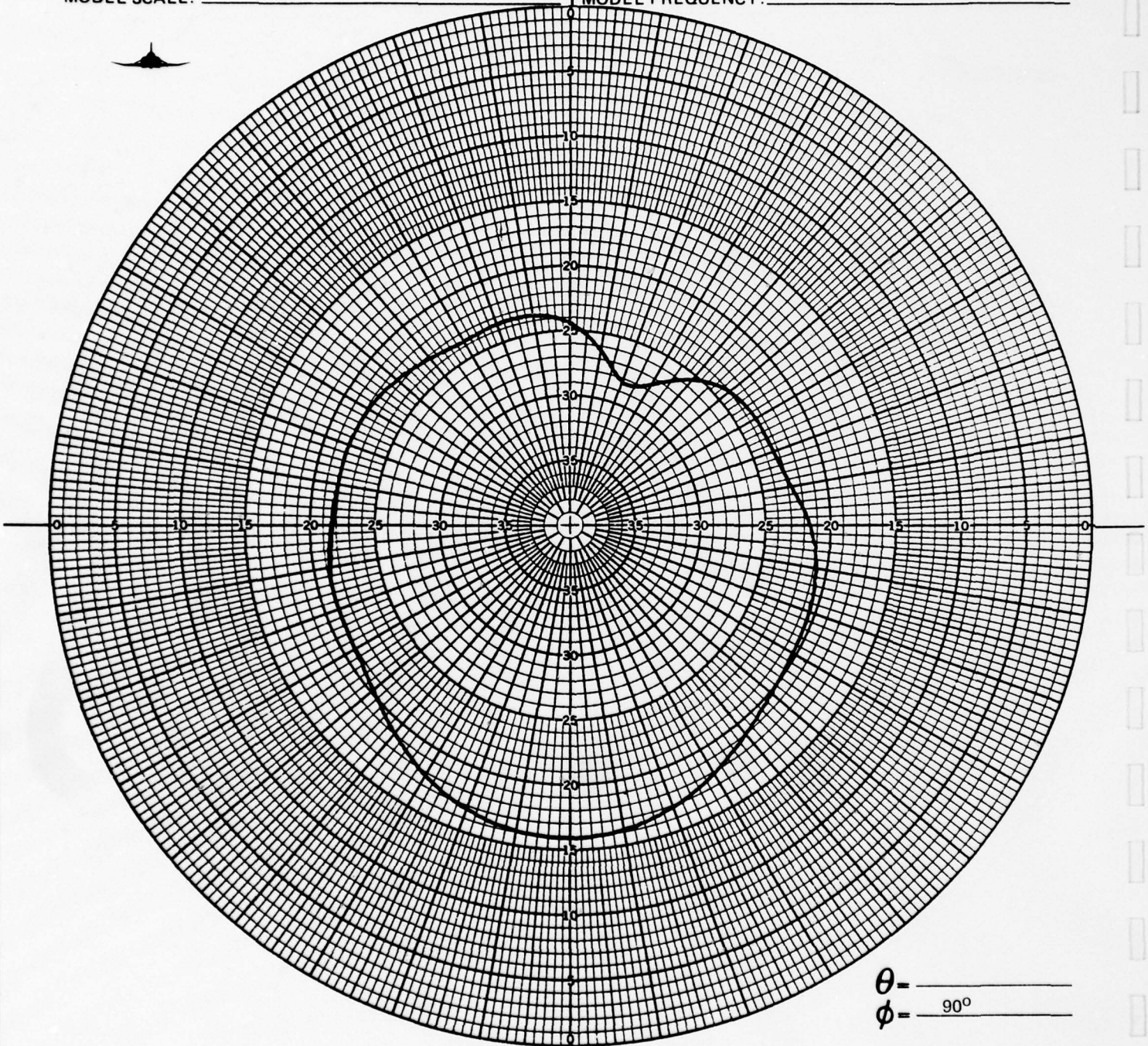
CONFIGURATION: 29
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: 285 FT
OBSERVER: PN, BM DATE: 4-22-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 33 MHz
MODEL FREQUENCY: _____ 165 MHz



θ = _____
 ϕ = _____ 90°

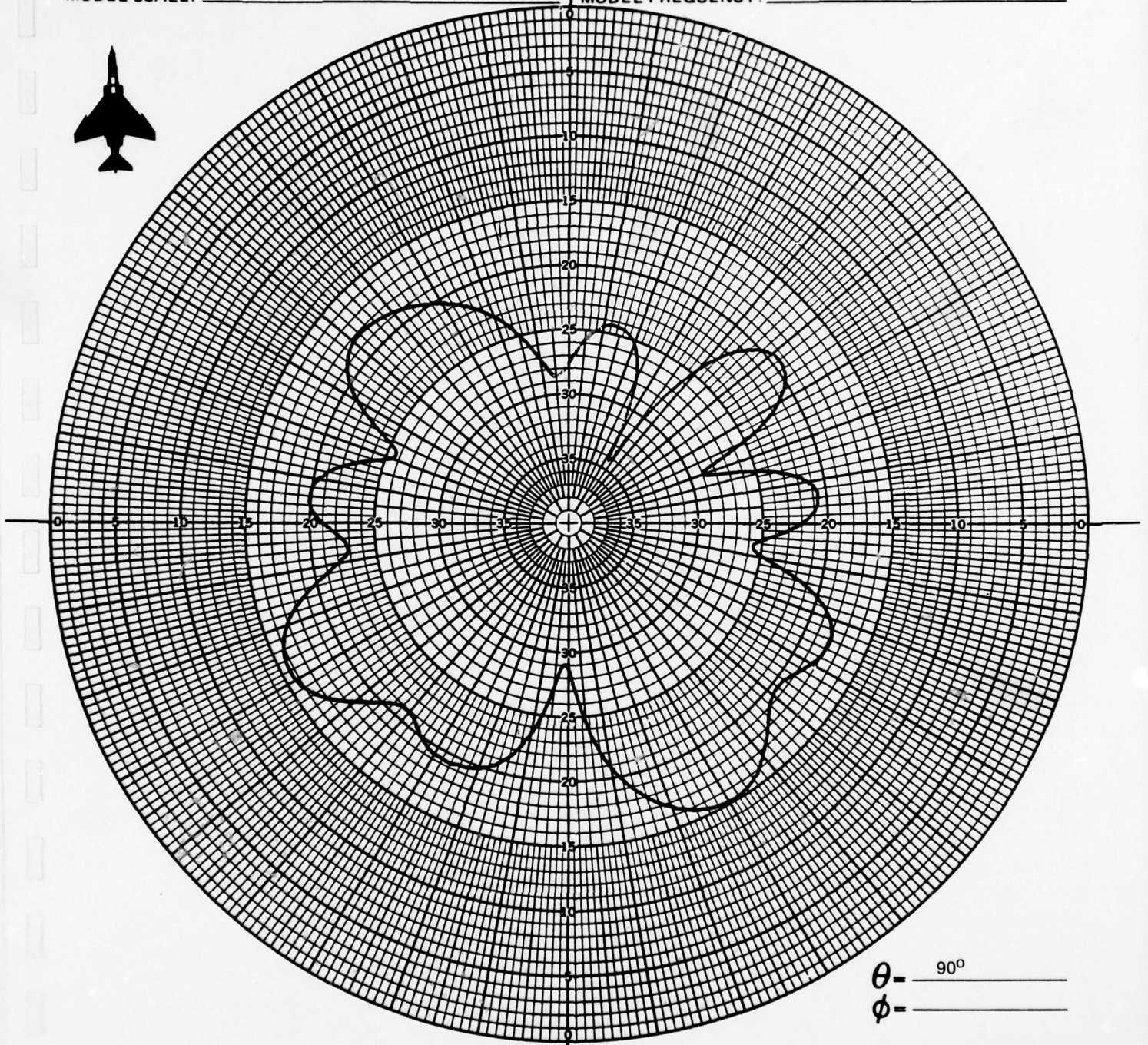
CONFIGURATION: _____ 29
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: _____ 4-22-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 33 MHz
MODEL FREQUENCY: _____ 165 MHz



θ - 90°
 ϕ - _____

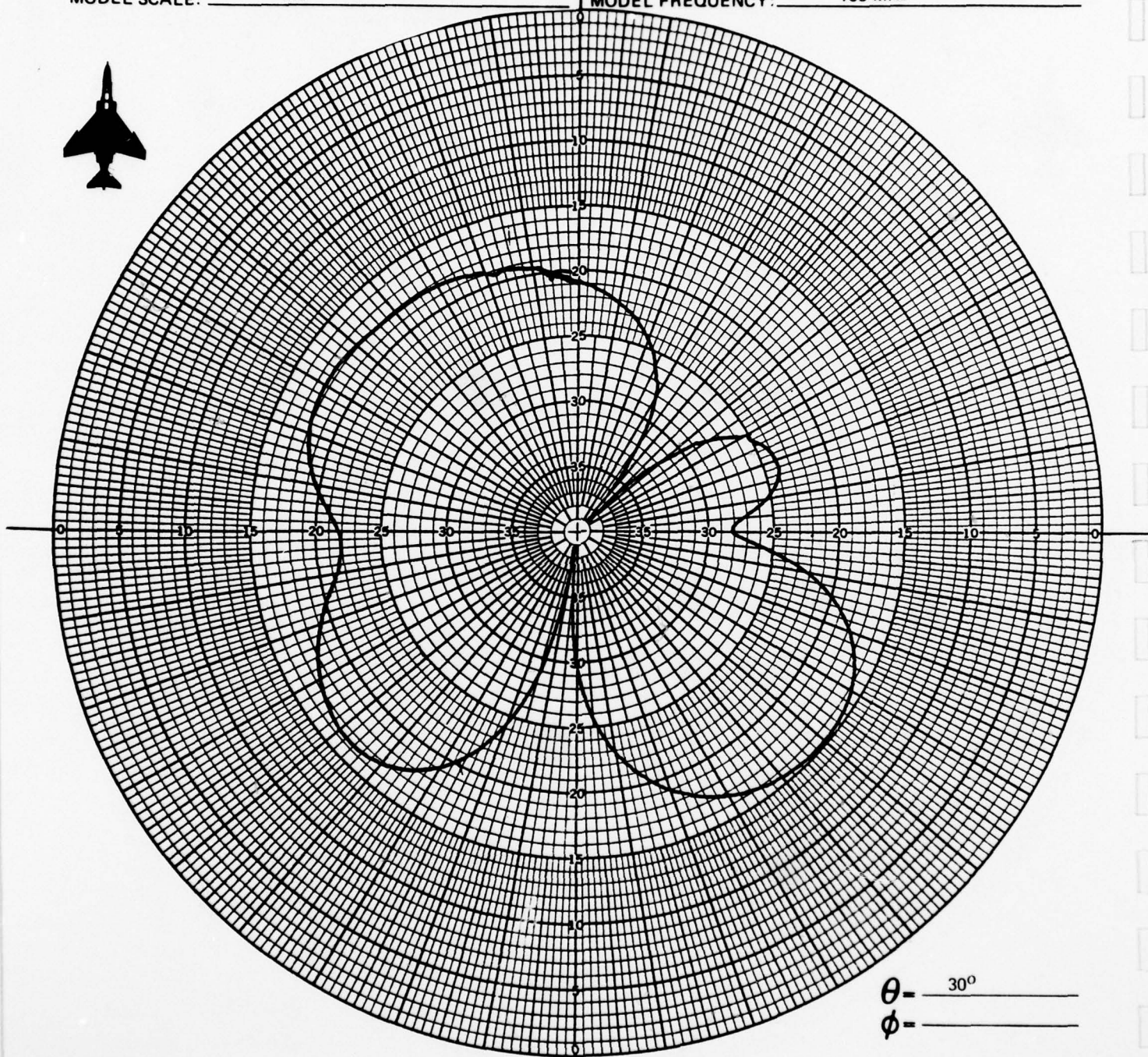
CONFIGURATION: _____ 29
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: 4-22-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 33 MHz
MODEL FREQUENCY: _____ 165 MHz



θ - 30°
 ϕ - _____

CONFIGURATION: _____ 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: E ϕ ☒ E θ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

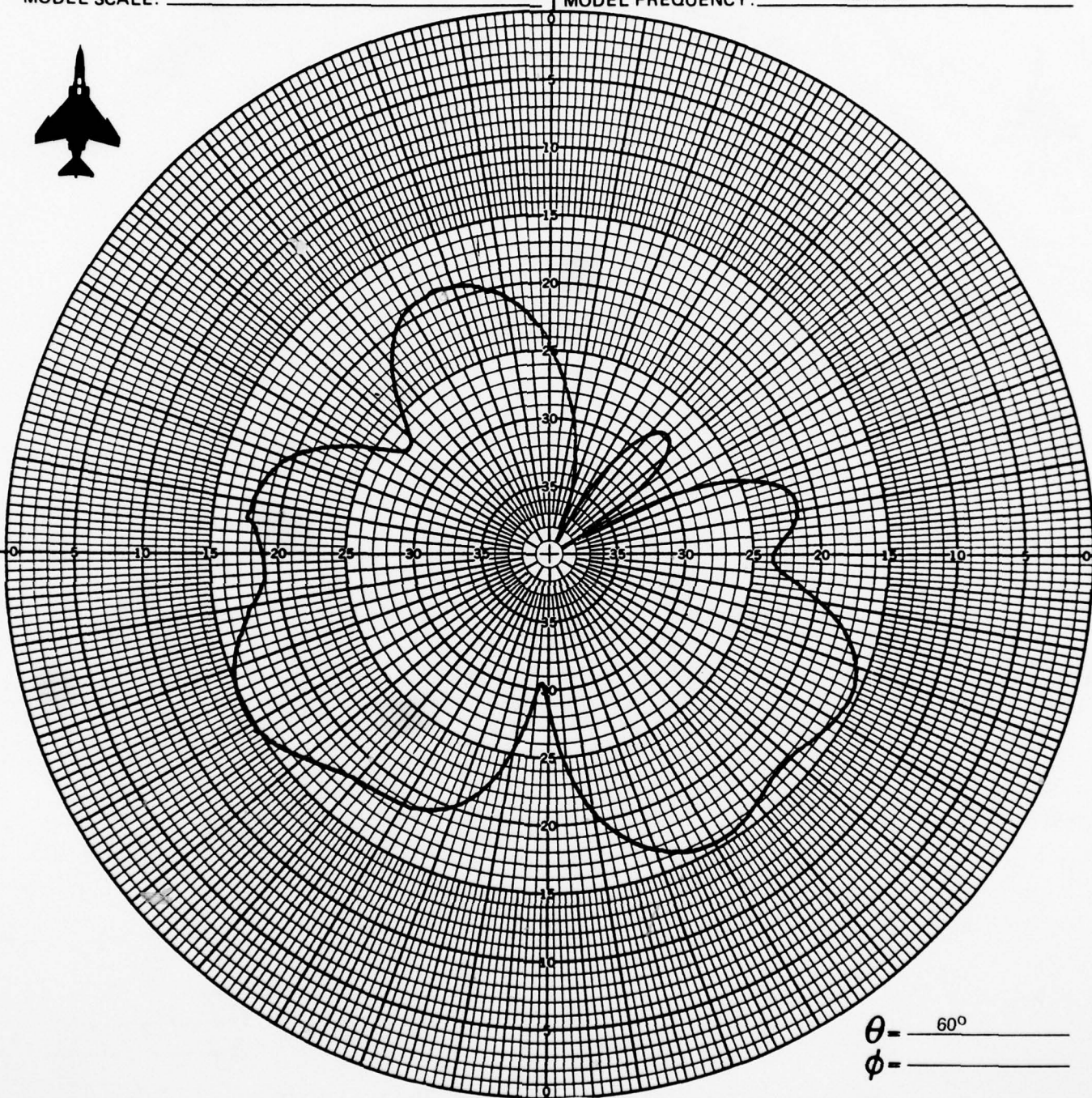
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: 4-22-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 33 MHz
MODEL FREQUENCY: 165 MHz



θ - 60°
 ϕ - _____

CONFIGURATION: 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

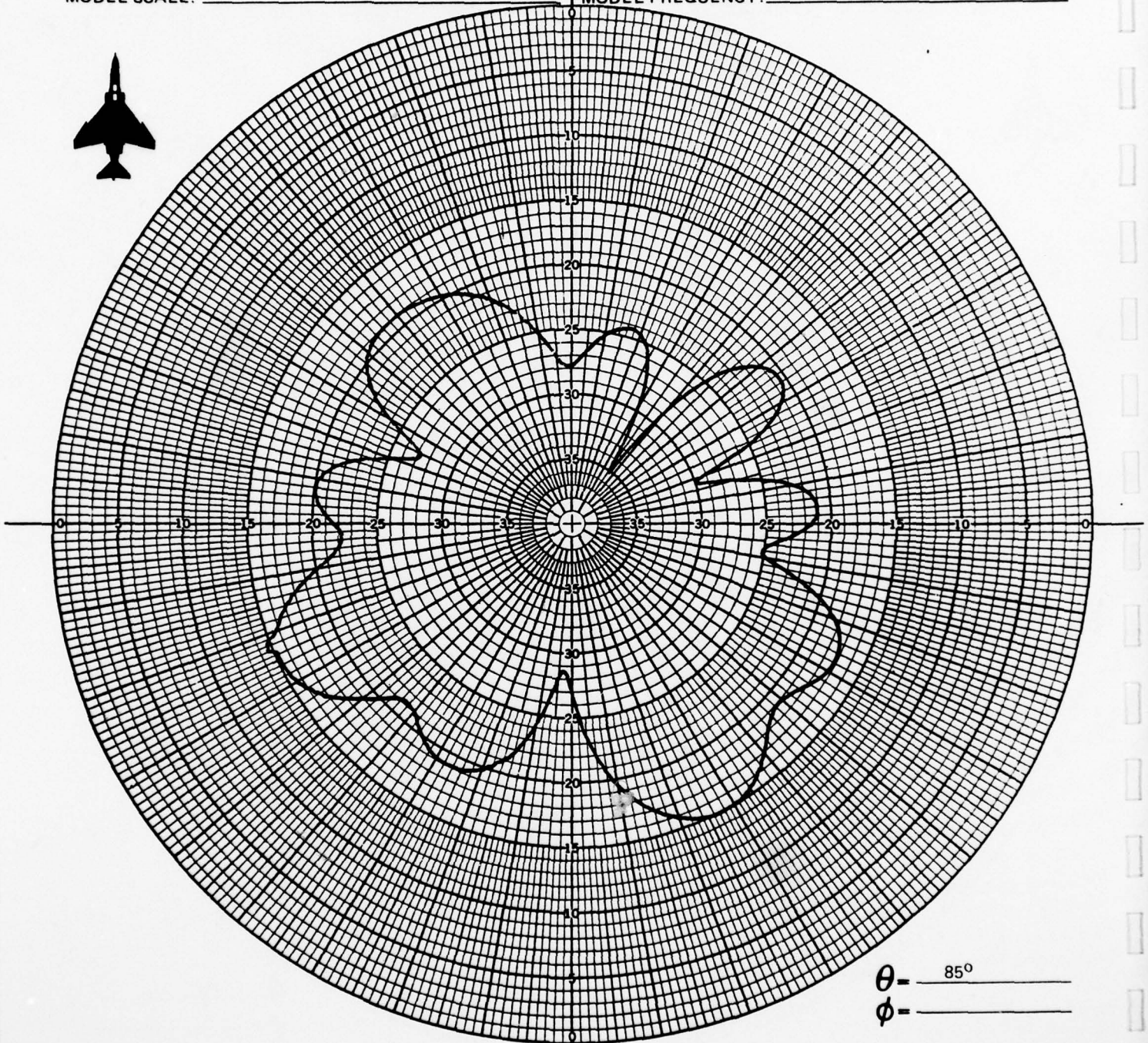
TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 4-22-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 33 MHz
MODEL FREQUENCY: 165 MHz



θ - 85°
 ϕ - _____

CONFIGURATION: 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

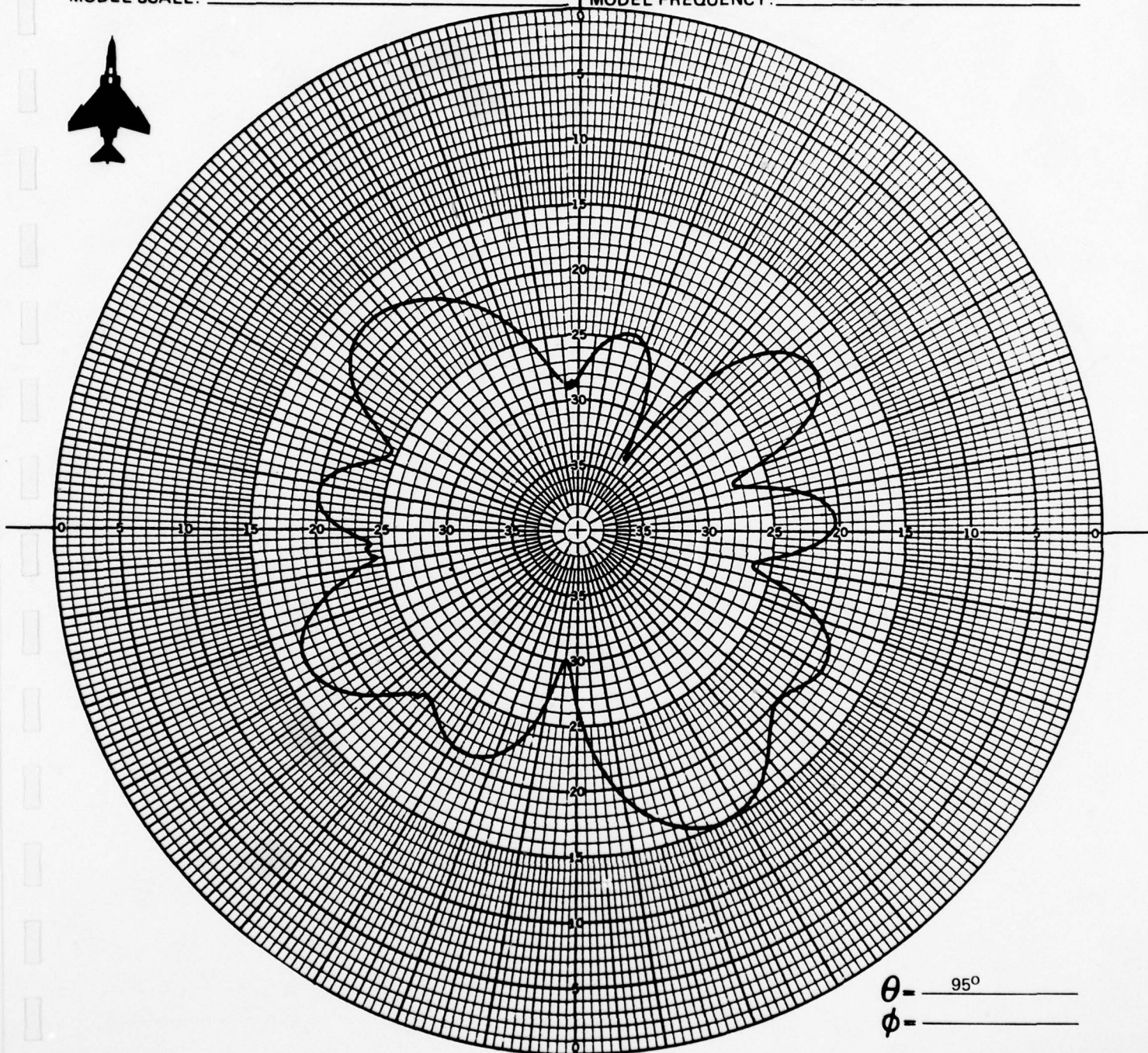
TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 4-22-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 33 MHz
MODEL FREQUENCY: _____ 165 MHz



θ - _____ 95°
 ϕ - _____

CONFIGURATION: _____ 29
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: E ☒ ϕ ☐ E θ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: _____ 4-22-77

PAGE NO. B-108

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE

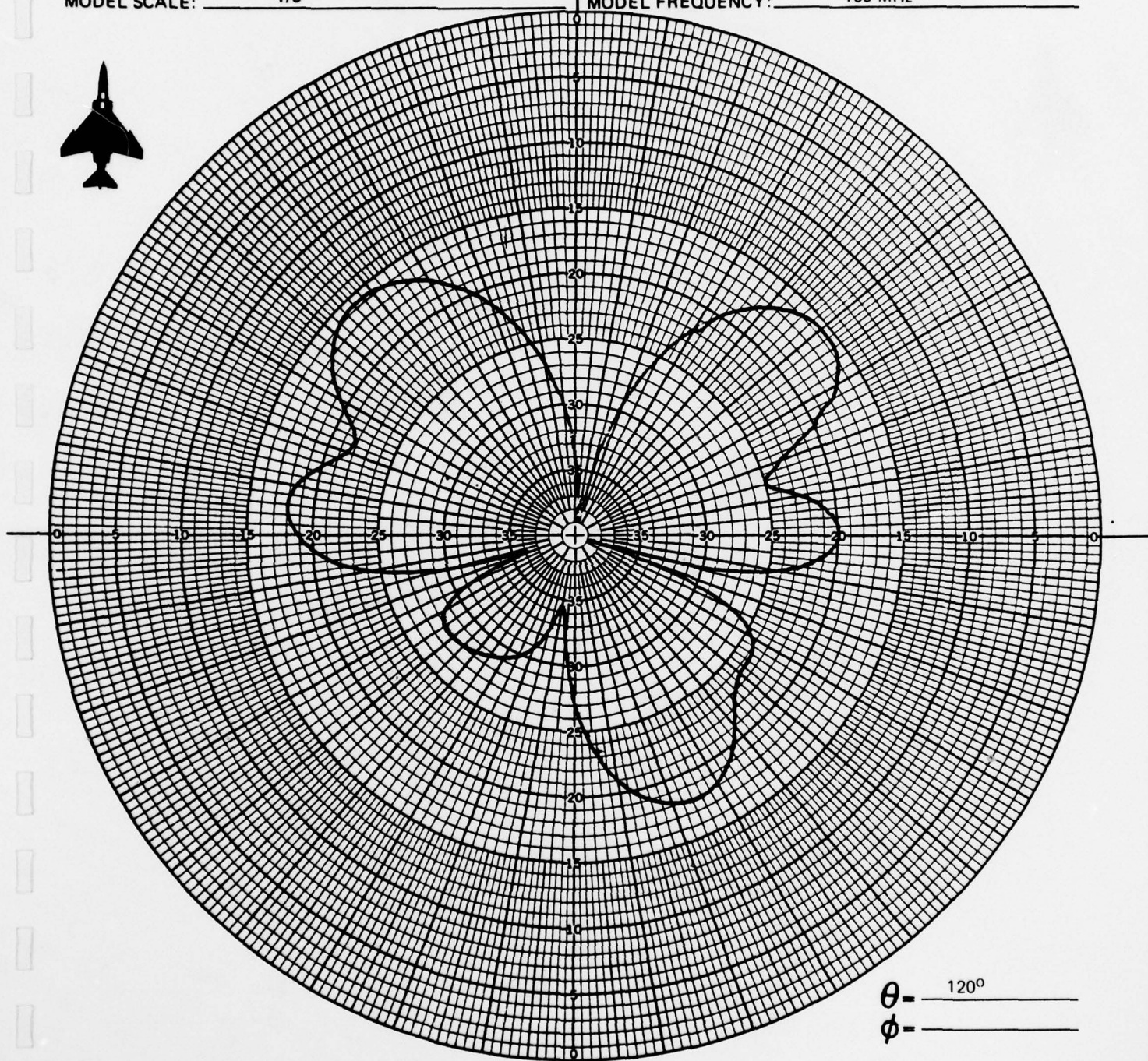
ANTENNA LOCATION: _____ FINCAP

MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)

FULL SCALE FREQUENCY: _____ 33 MHz

MODEL FREQUENCY: _____ 165 MHz



θ - _____ 120°
 ϕ - _____

CONFIGURATION: _____ 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

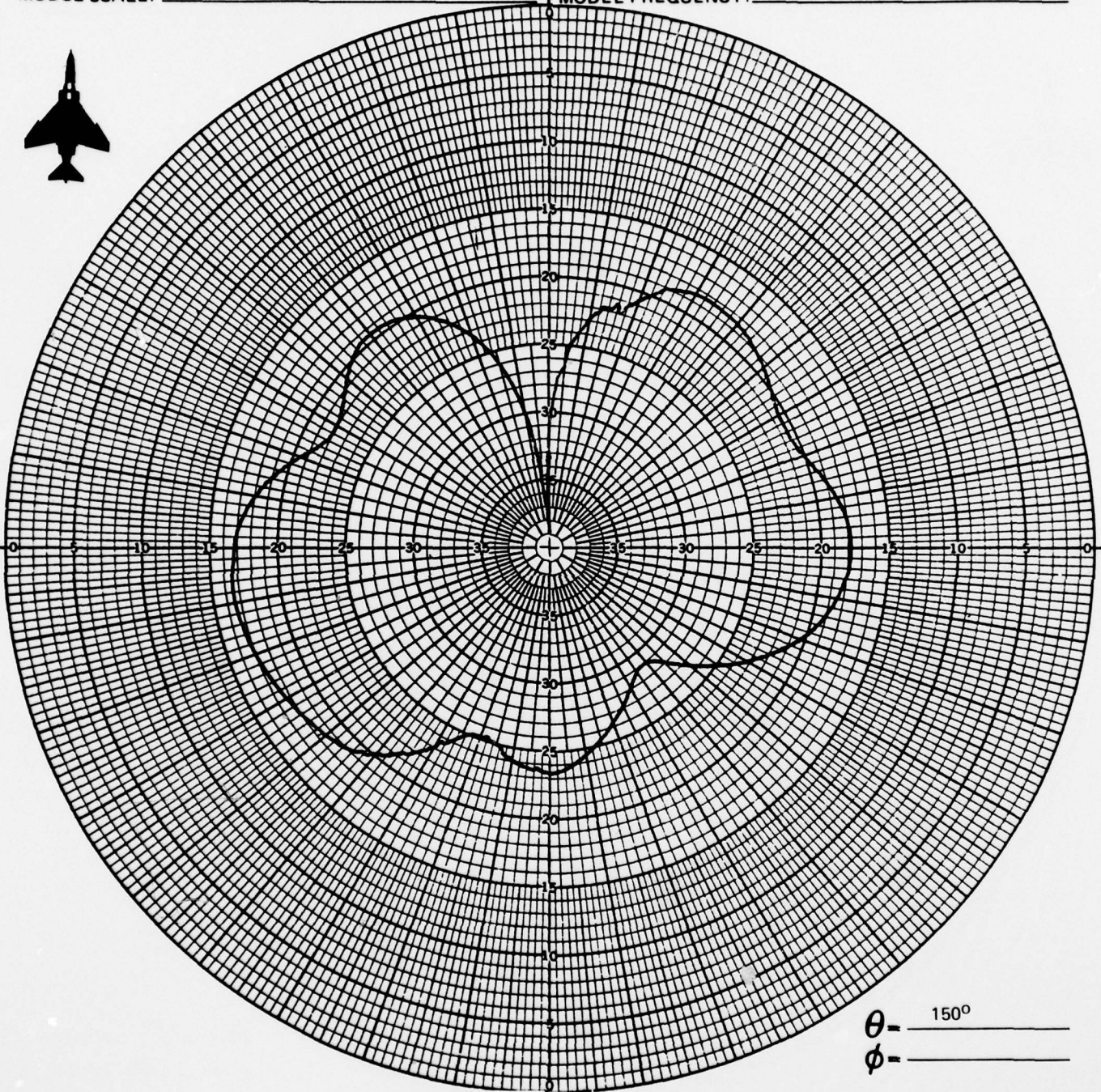
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 4-22-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 33 MHz
MODEL FREQUENCY: _____ 165 MHz



θ - 150°
 ϕ - _____

CONFIGURATION: _____ 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: ☒ E ϕ ☐ E θ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

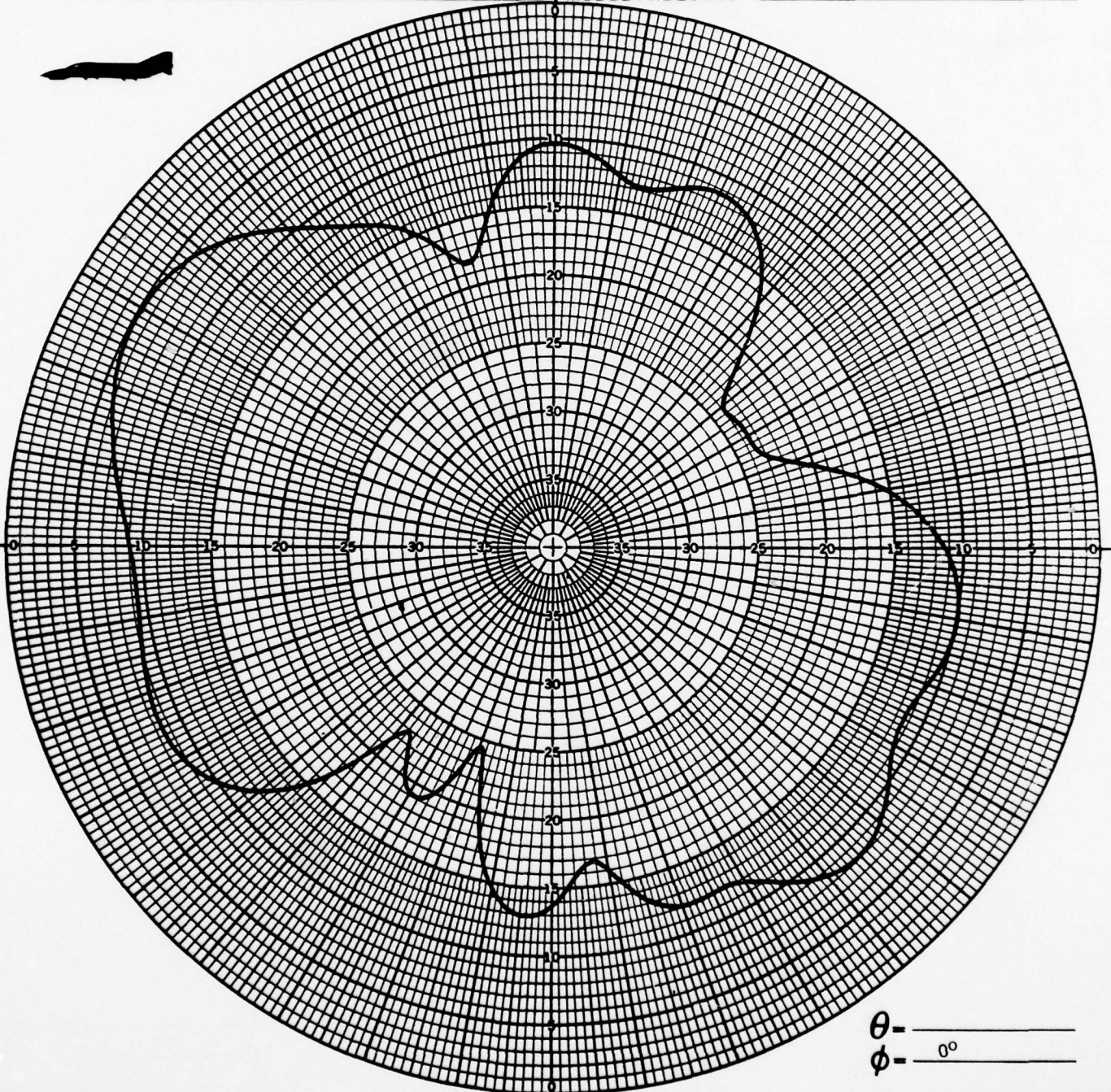
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 4-22-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 42 MHz
MODEL FREQUENCY: 210 MHz



θ - _____
 ϕ - 0°

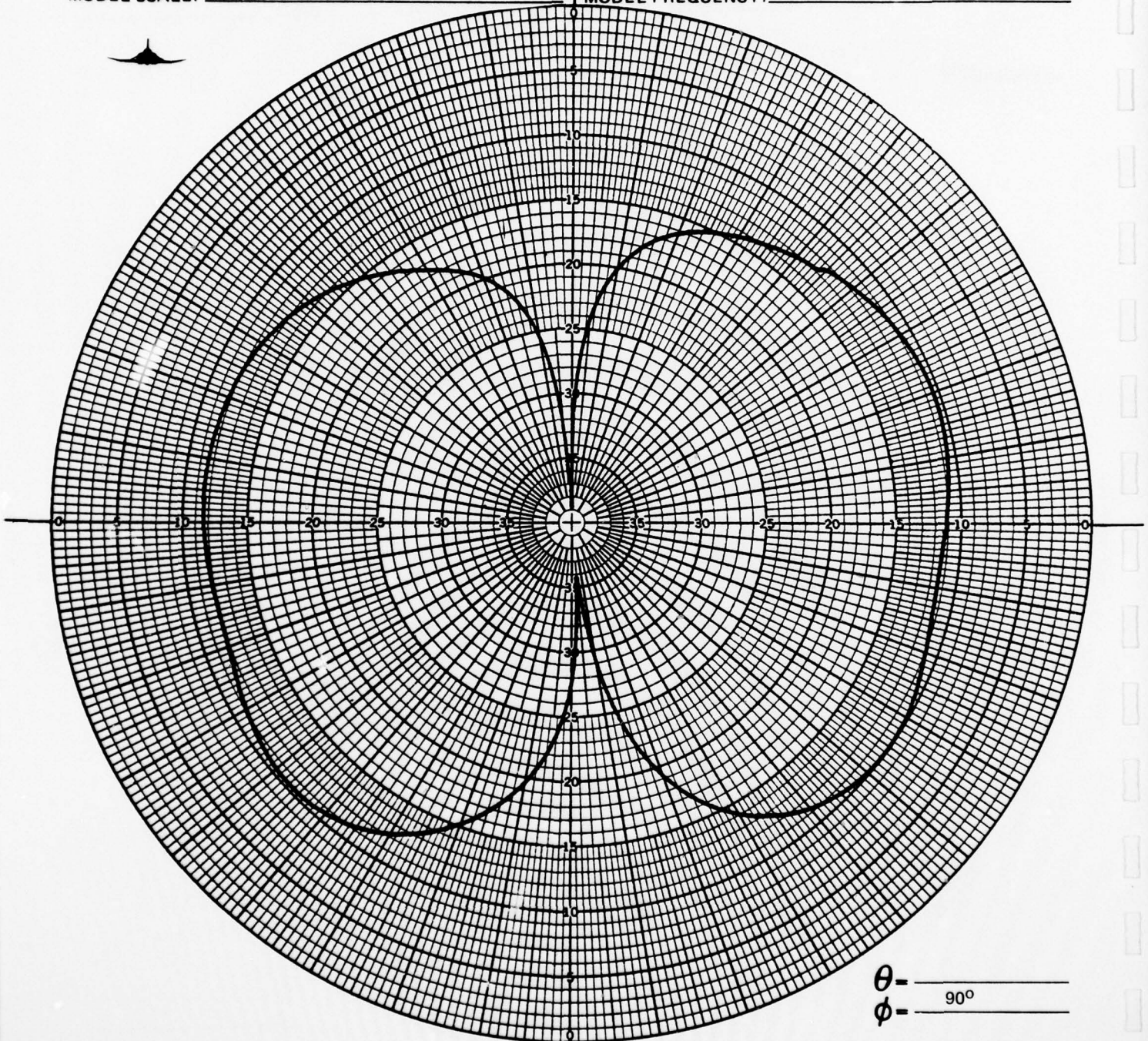
CONFIGURATION: 29
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: 285 FT
OBSERVER: PN, BM DATE: 4-21-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 42 MHz
MODEL FREQUENCY: 210 MHz



CONFIGURATION: 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

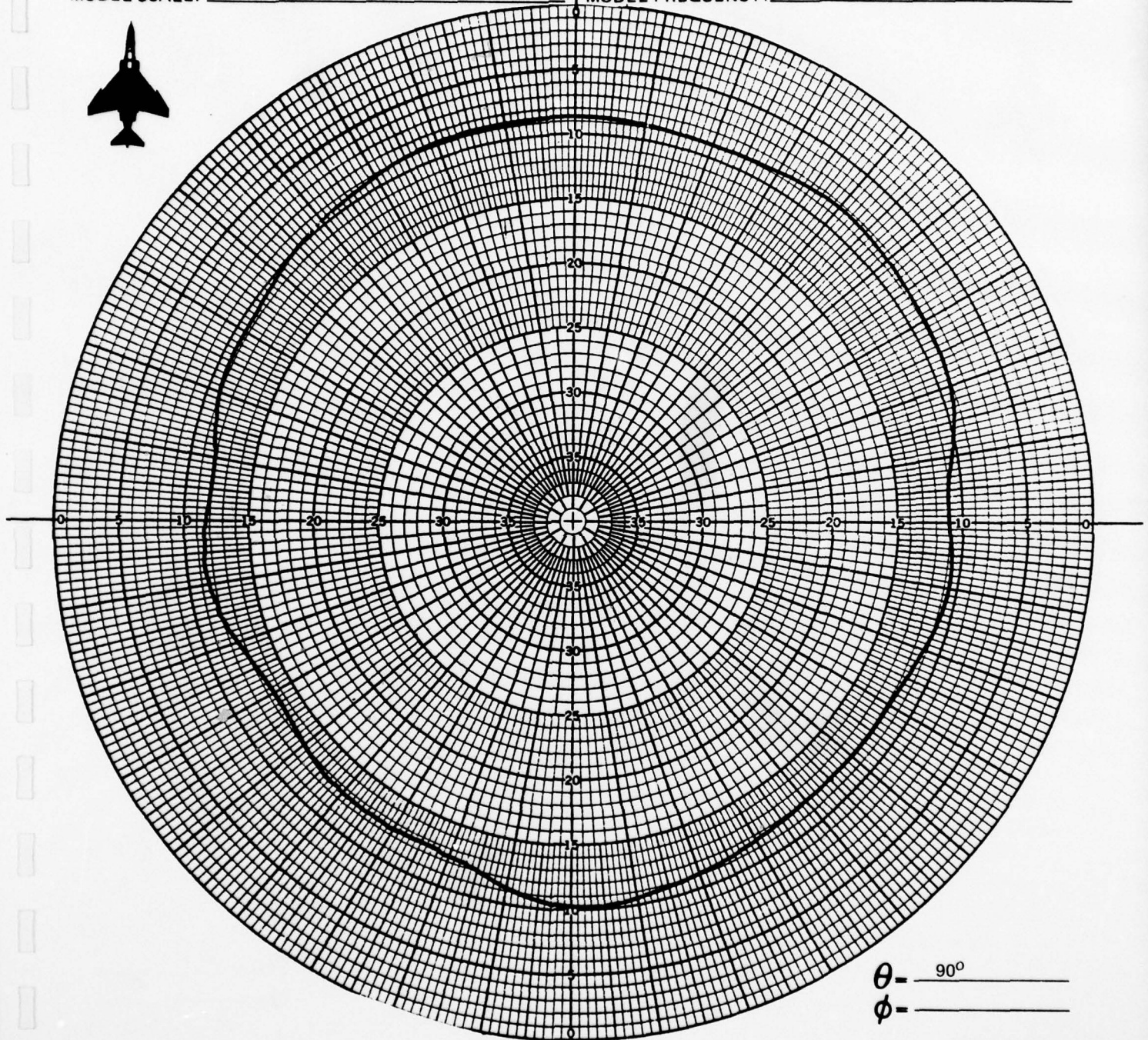
TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 4-21-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 42 MHz
MODEL FREQUENCY: _____ 210 MHz



θ - 90°
 ϕ - _____

CONFIGURATION: _____ 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: E ϕ ☐ E θ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 4-21-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE

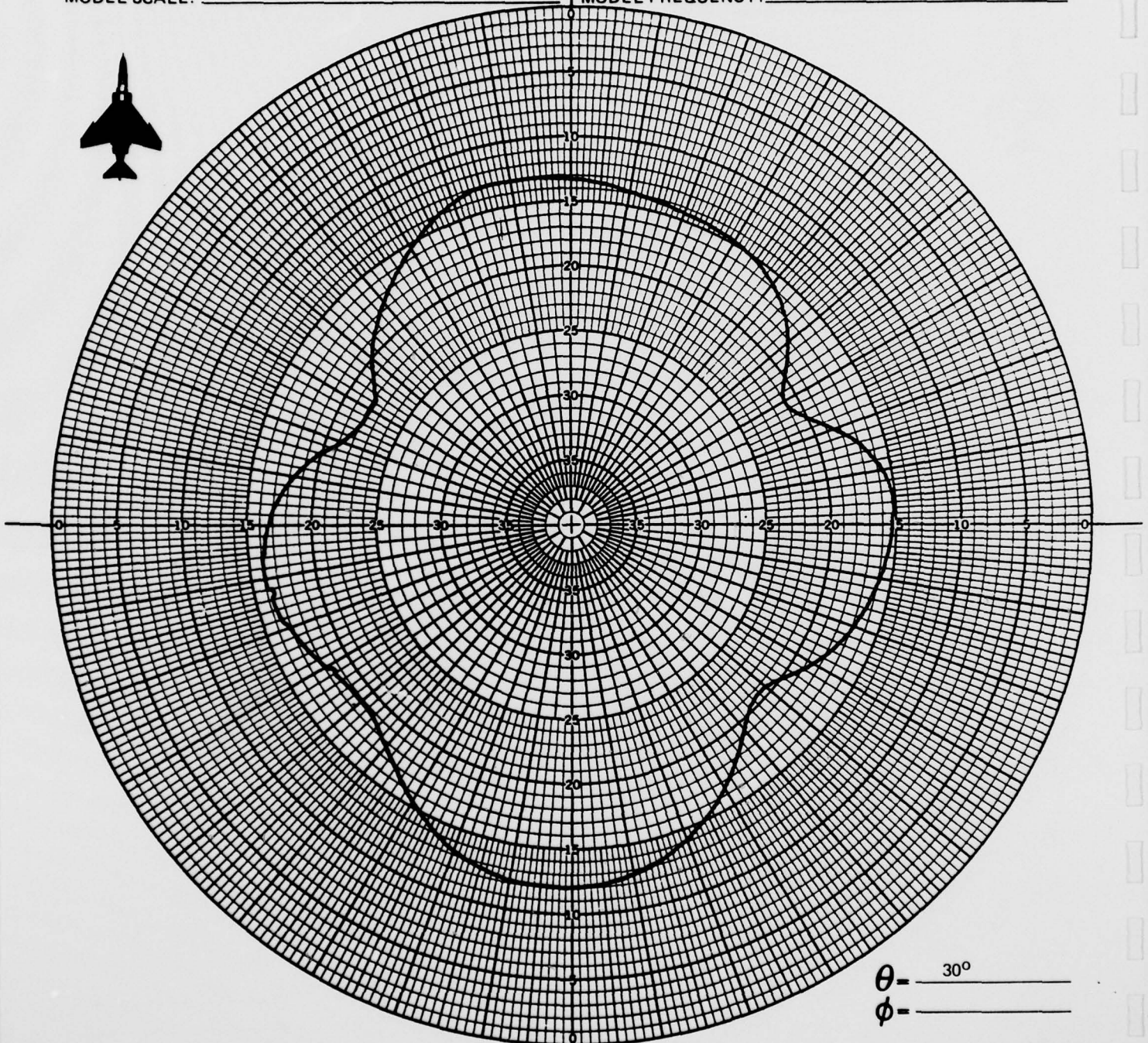
ANTENNA LOCATION: _____ FINCAP

MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)

FULL SCALE FREQUENCY: _____ 42 MHz

MODEL FREQUENCY: _____ 210 MHz



θ - 30°
 ϕ - _____

CONFIGURATION: _____ 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: E ϕ ☐ E θ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 4-21-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE

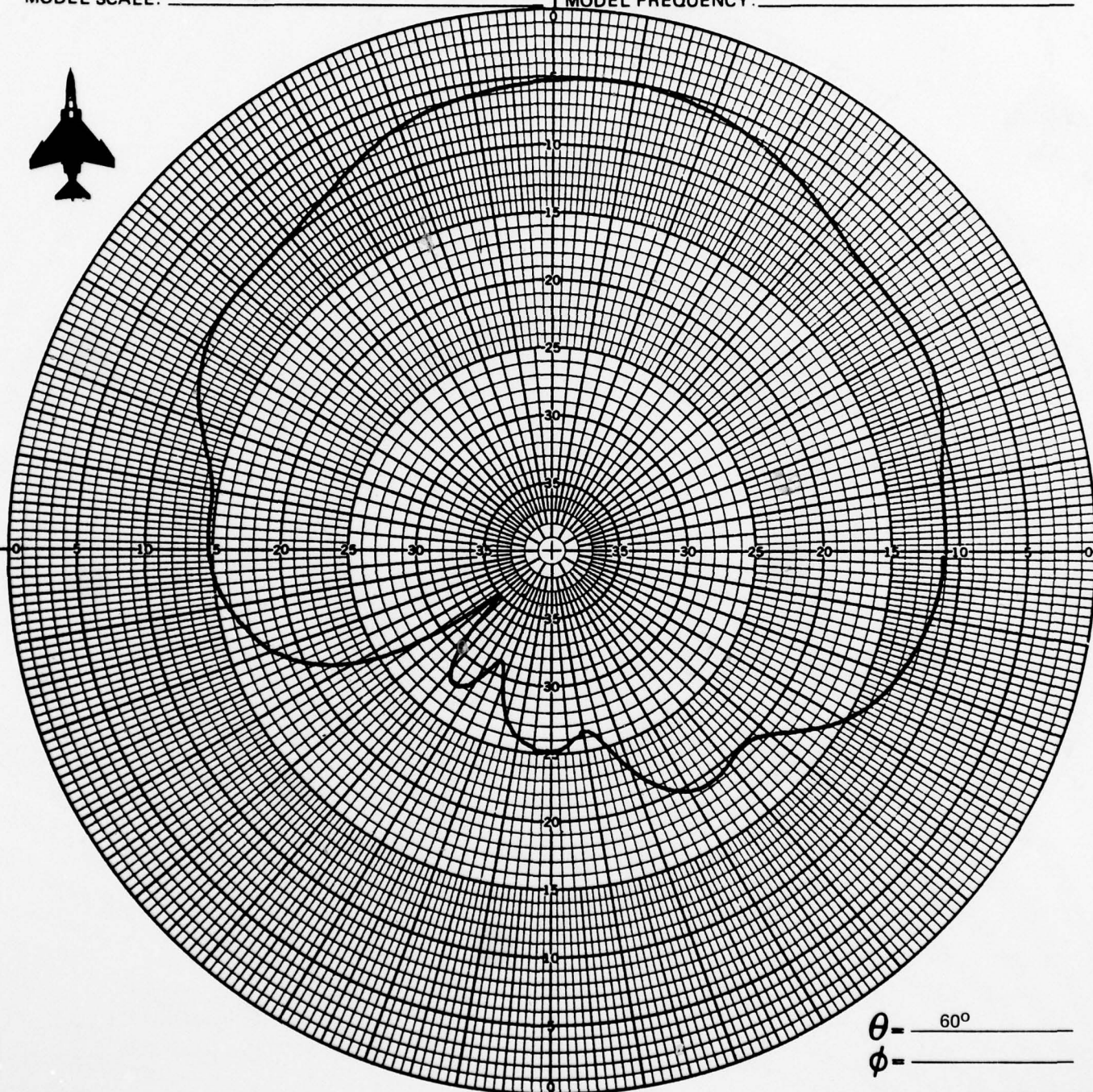
ANTENNA LOCATION: _____ FINCAP

MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)

FULL SCALE FREQUENCY: _____ 42 MHz

MODEL FREQUENCY: _____ 210 MHz



θ - _____ 60°
 ϕ - _____

CONFIGURATION: _____ 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: _____ 285 FT

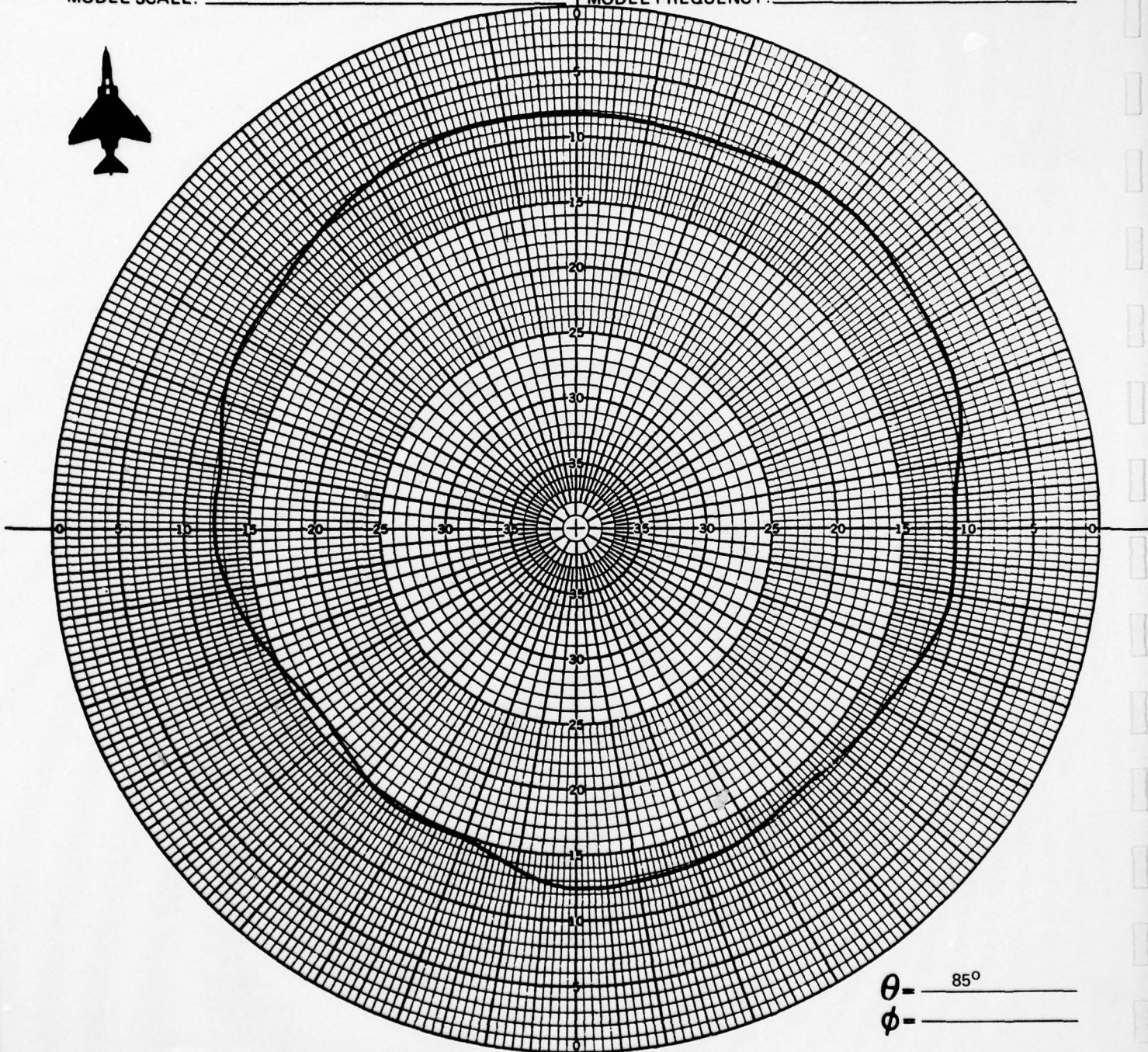
OBSERVER: _____ PN, BM

DATE: _____ 4-21-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 42 MHz
MODEL FREQUENCY: _____ 210 MHz



θ - 85°
 ϕ -

CONFIGURATION: _____ 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 4-21-77

AD-A049 699

MCDONNELL AIRCRAFT CO ST LOUIS MO
MULTIBAND ANTENNA SYSTEM FOR TACTICAL AIRCRAFT.(U)
SEP 77 F W VORTMEIER

F/G 17/2.1

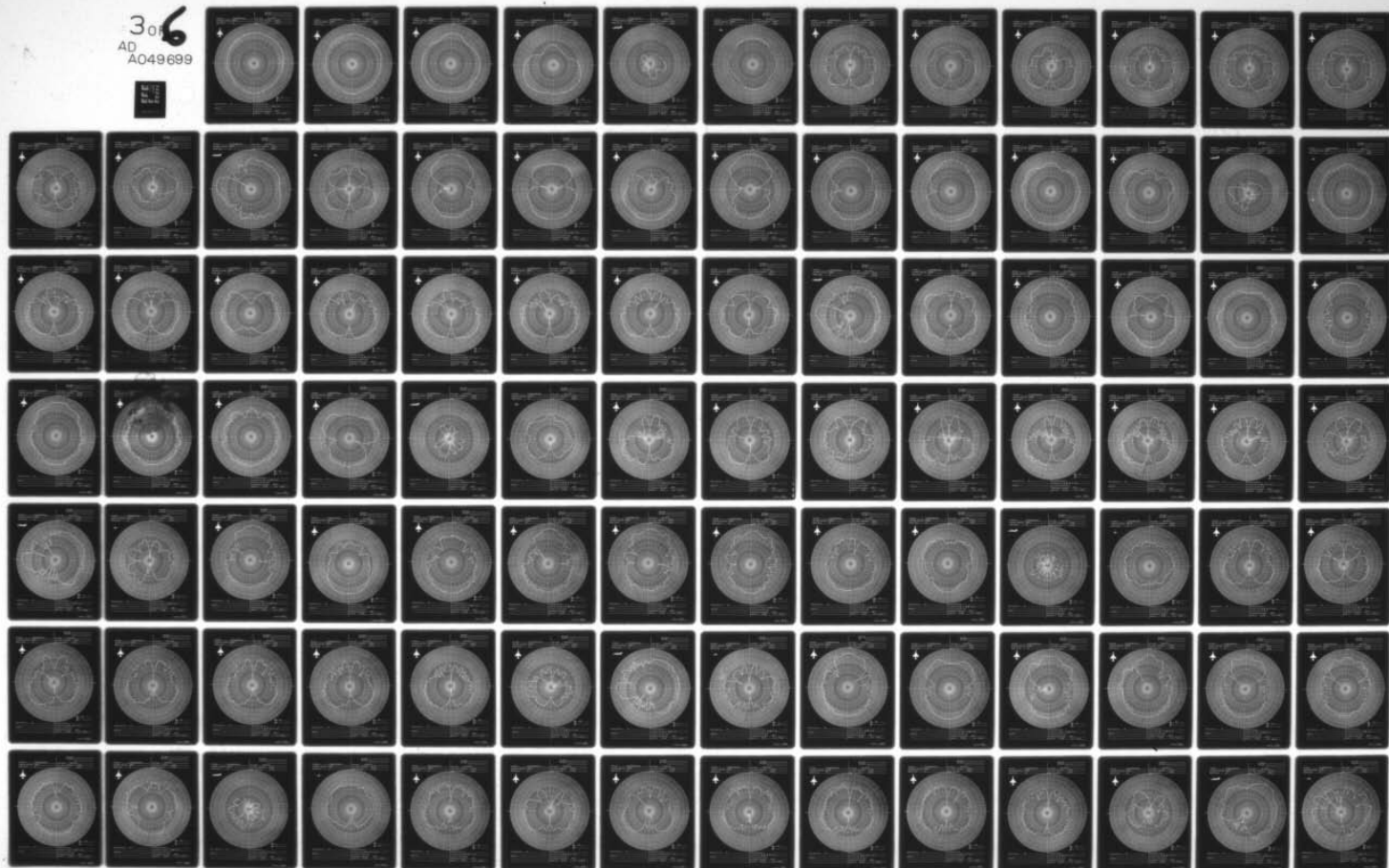
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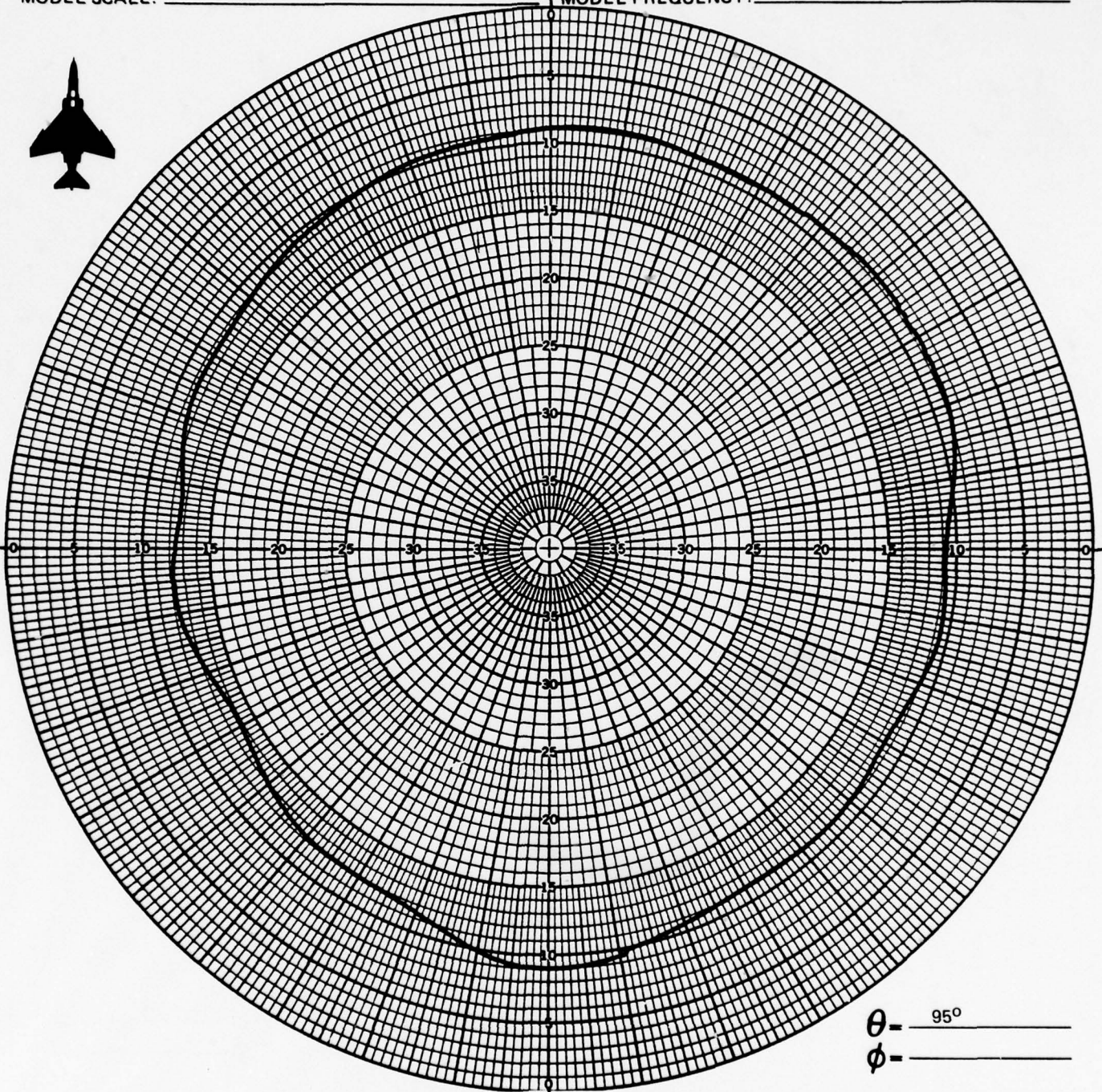
306
AD
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DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 42 MHz
MODEL FREQUENCY: _____ 210 MHz



θ - 95°
 ϕ - _____

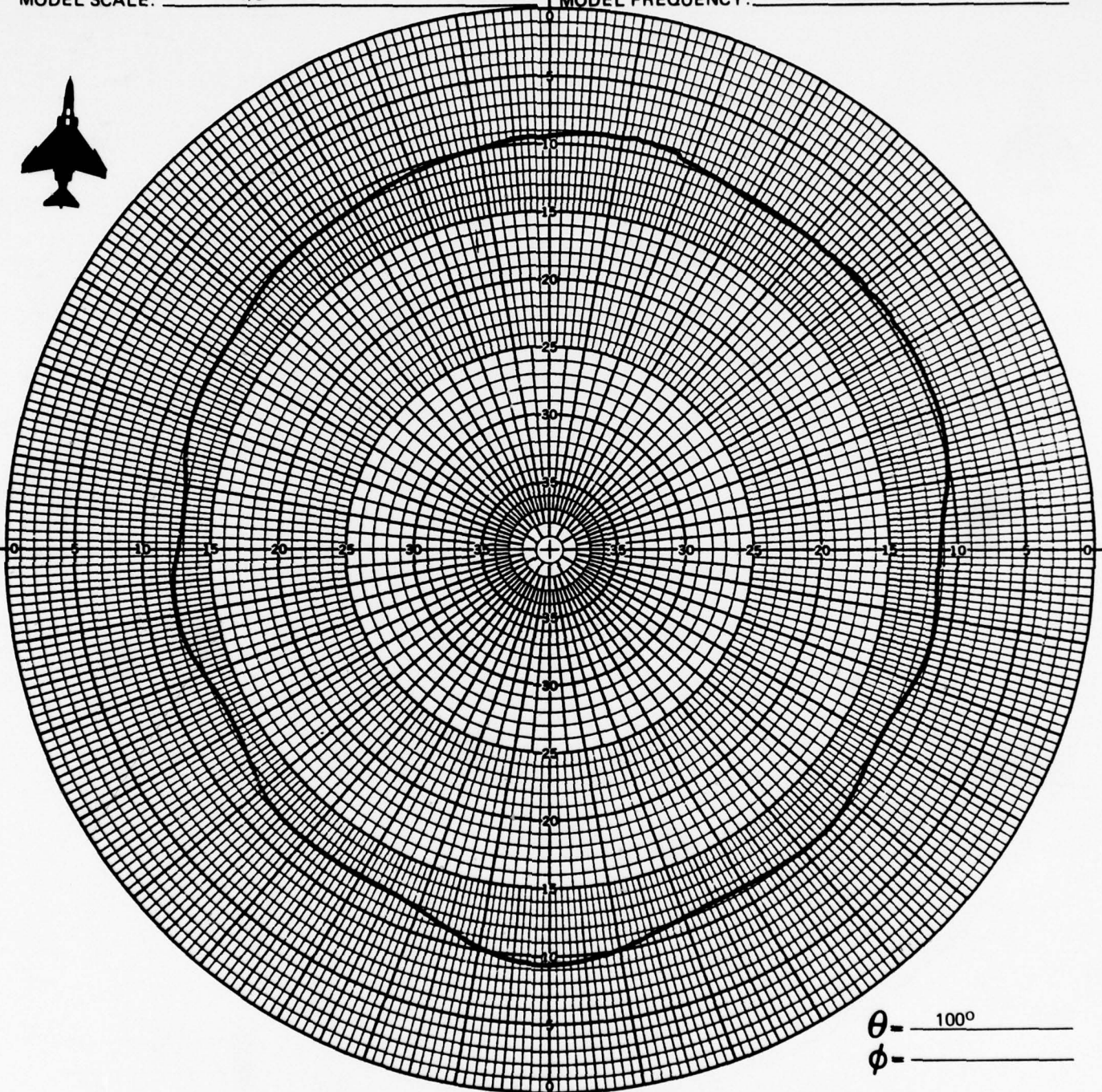
CONFIGURATION: _____ 29
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: E ϕ ☐ E θ ☒ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM _____ DATE: 4-21-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 42 MHz
MODEL FREQUENCY: _____ 210 MHz



θ - _____ 100°
 ϕ - _____

CONFIGURATION: _____ 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

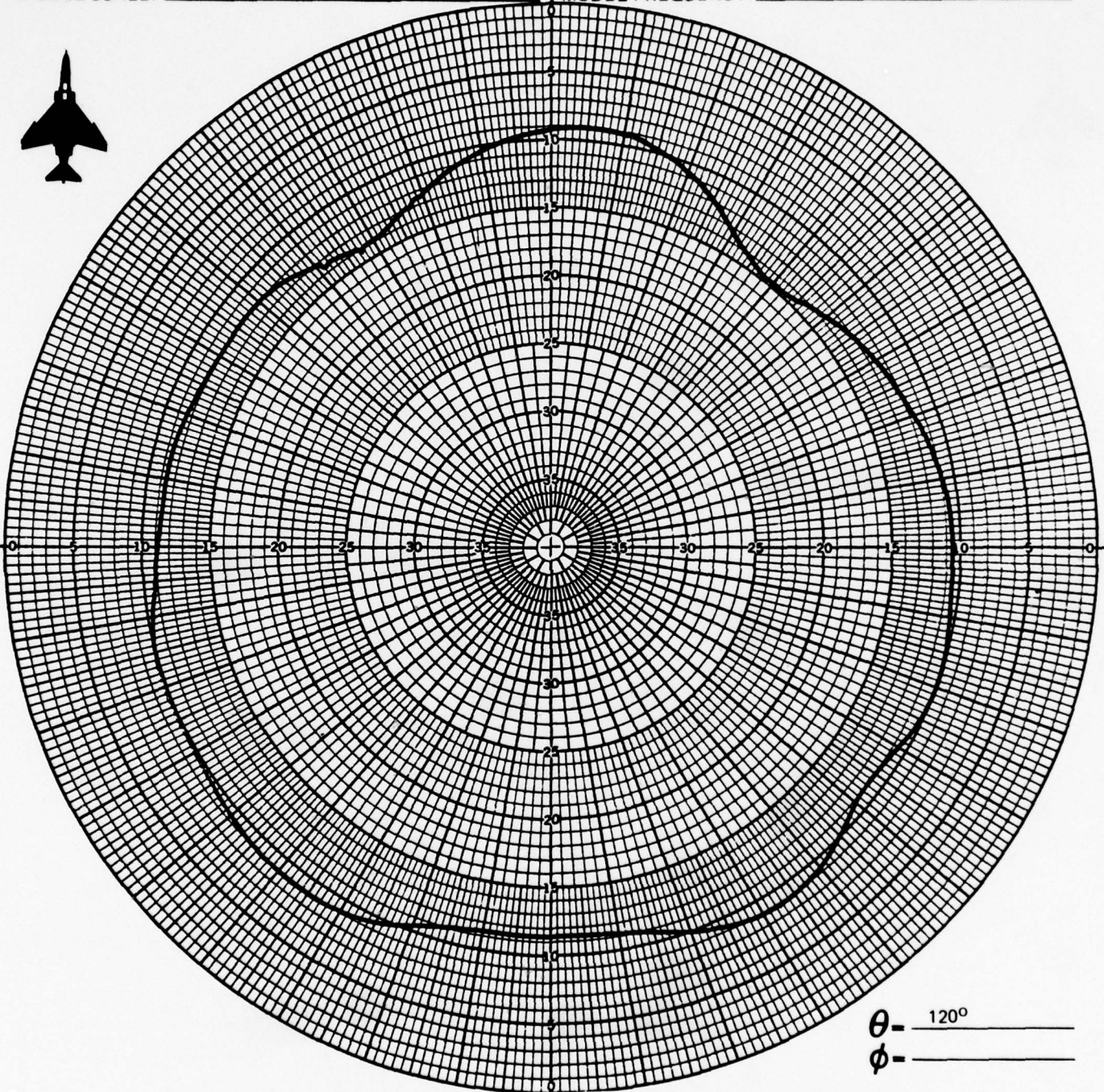
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 4-21-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 42 MHz
MODEL FREQUENCY: _____ 210 MHz



θ - 120°
 ϕ - _____

CONFIGURATION: _____ 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

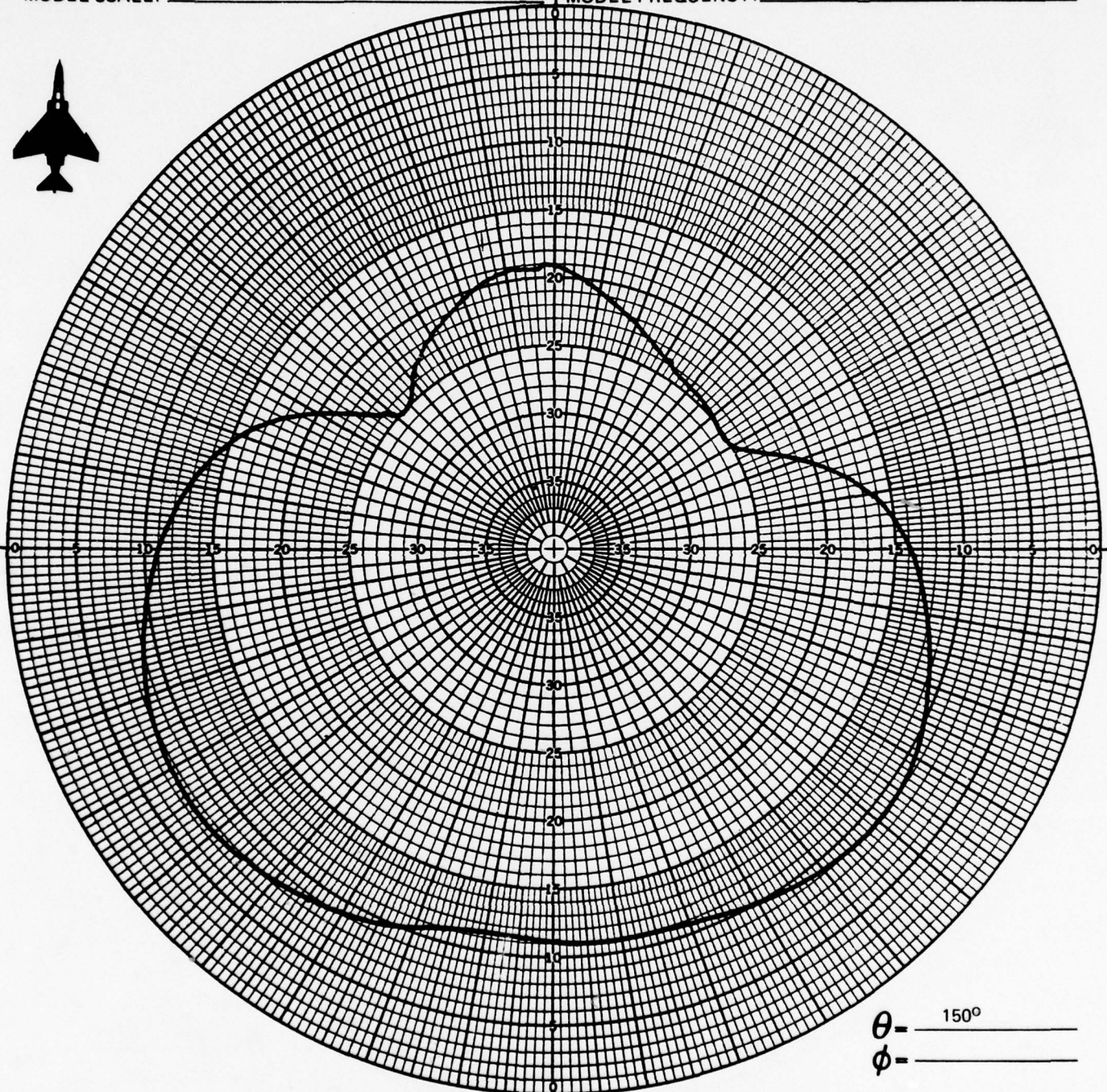
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: 4-21-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 42 MHz
MODEL FREQUENCY: 210 MHz



θ - 150°
 ϕ - _____

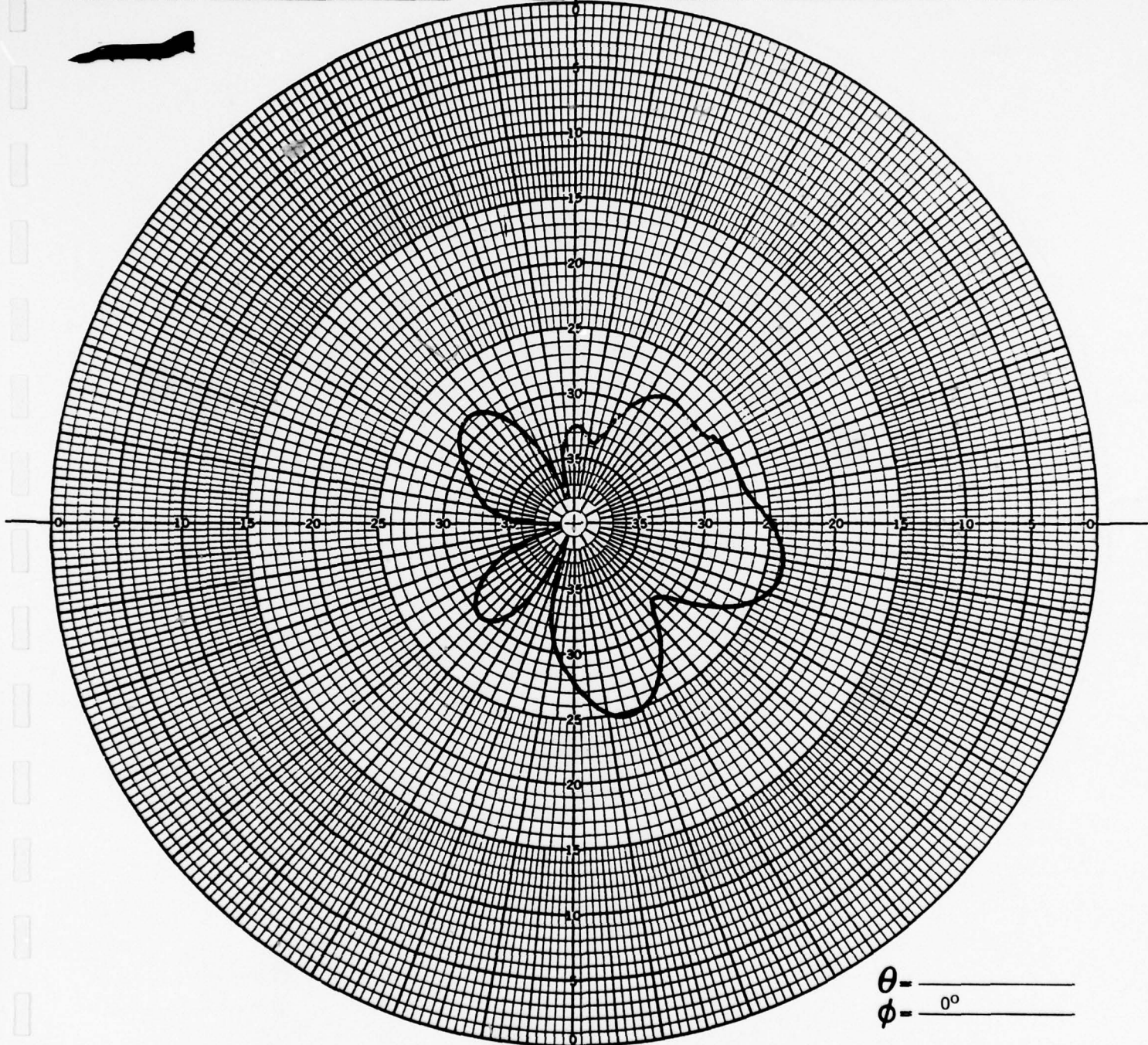
CONFIGURATION: 29
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: 285 FT
OBSERVER: PN, BM DATE: 4-21-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 42 MHz
MODEL FREQUENCY: 210 MHz



θ - _____
 ϕ - 0°

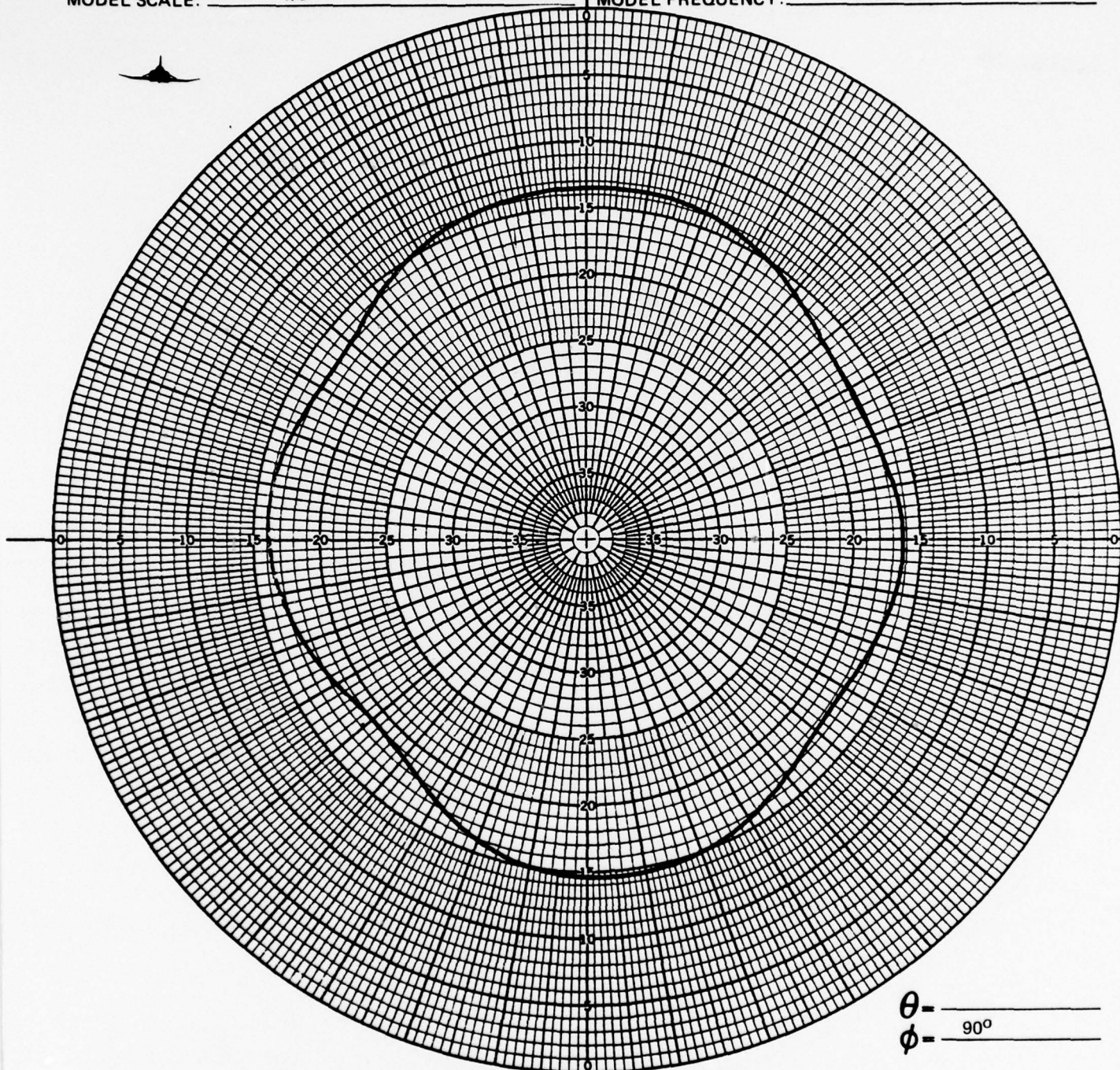
CONFIGURATION: 29
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: 285 FT
OBSERVER: PN, BM DATE: 4-21-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 42 MHz
MODEL FREQUENCY: 210 MHz



CONFIGURATION: 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 4-21-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE

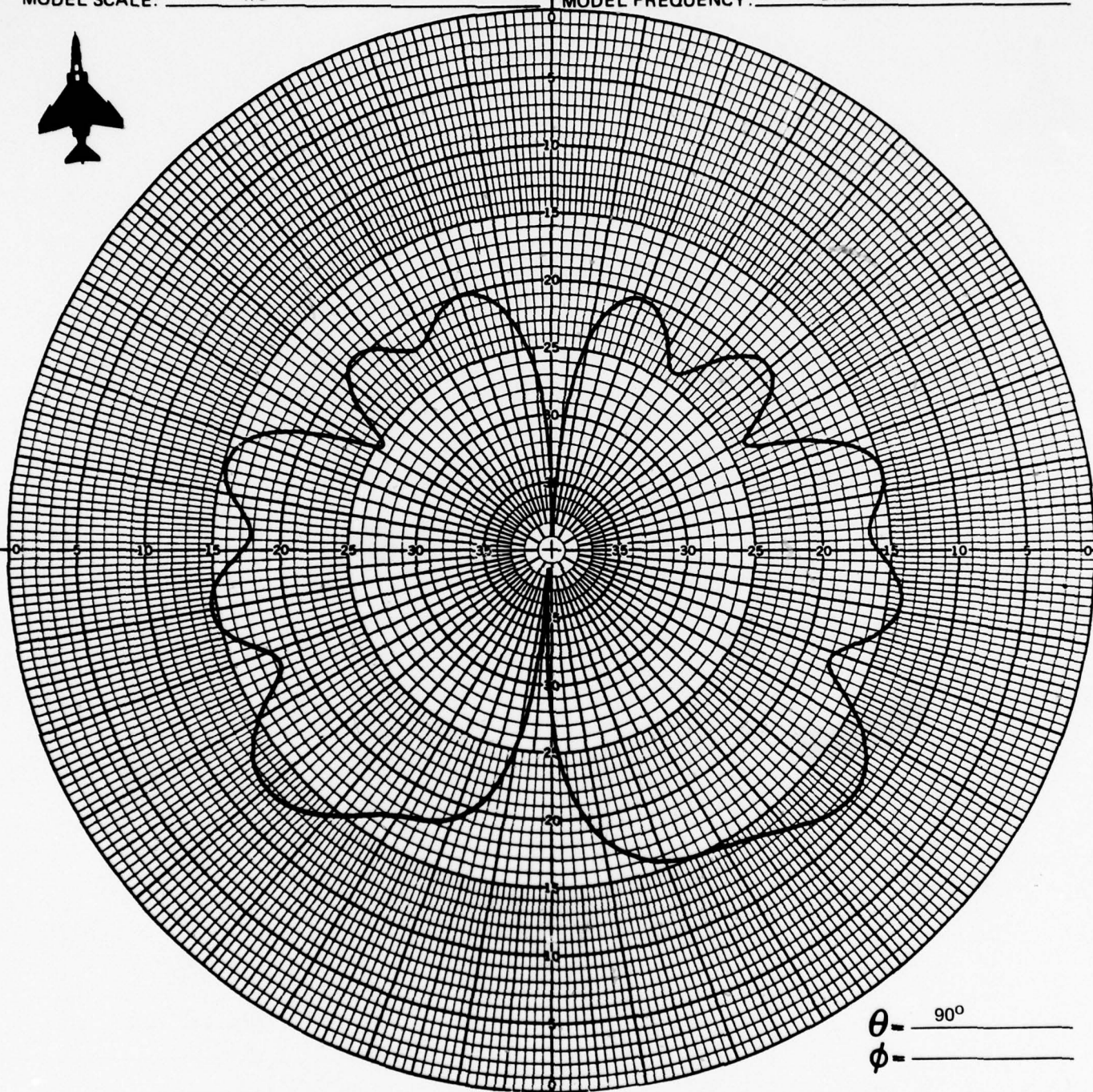
ANTENNA LOCATION: _____ FINCAP

MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)

FULL SCALE FREQUENCY: _____ 42 MHz

MODEL FREQUENCY: _____ 210 MHz



θ - 90°
 ϕ - _____

CONFIGURATION: _____ 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: E ϕ ☒ E θ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

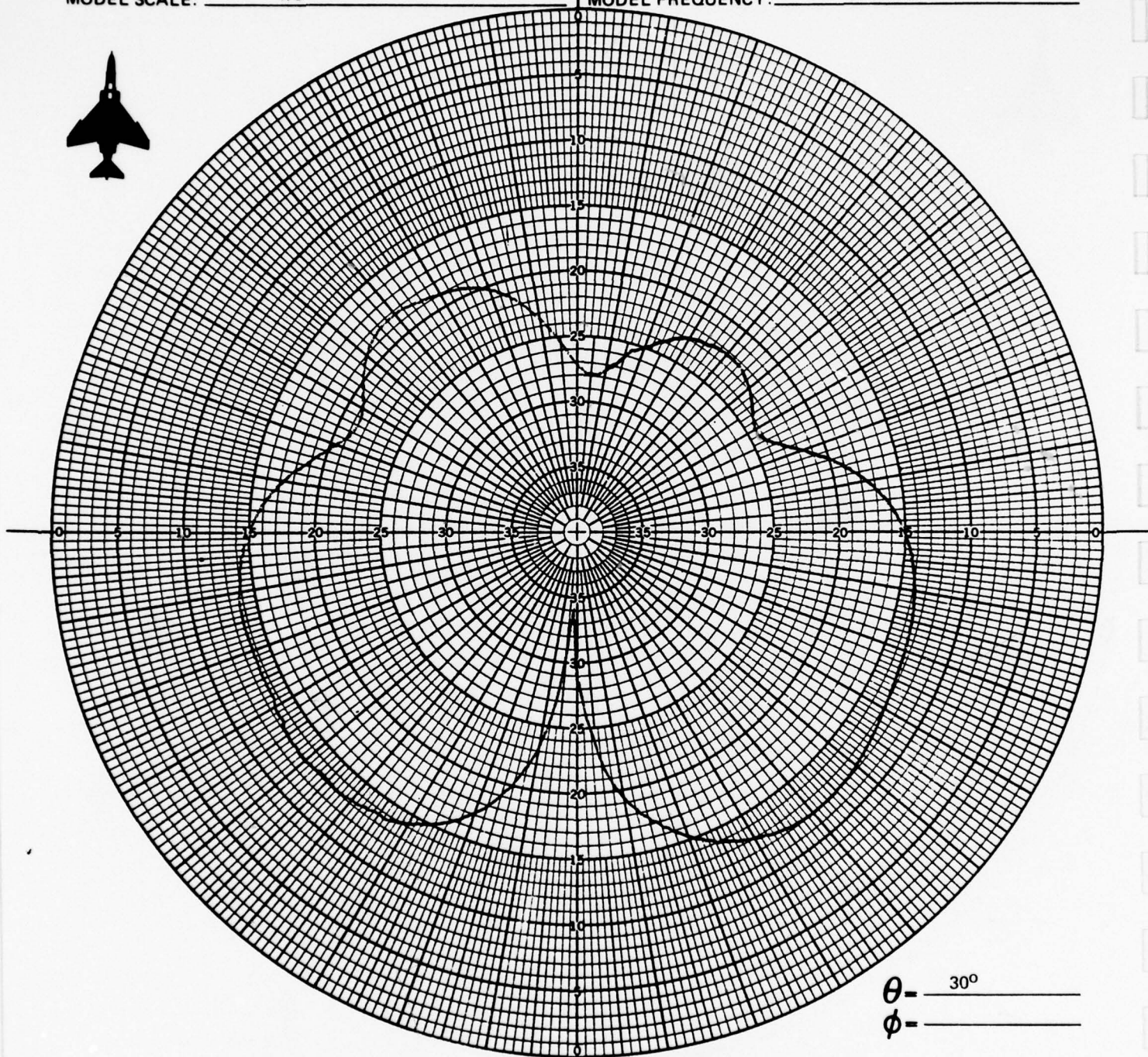
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: 4-21-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 42 MHz
MODEL FREQUENCY: _____ 210 MHz



θ - 30°
 ϕ - _____

CONFIGURATION: _____ 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

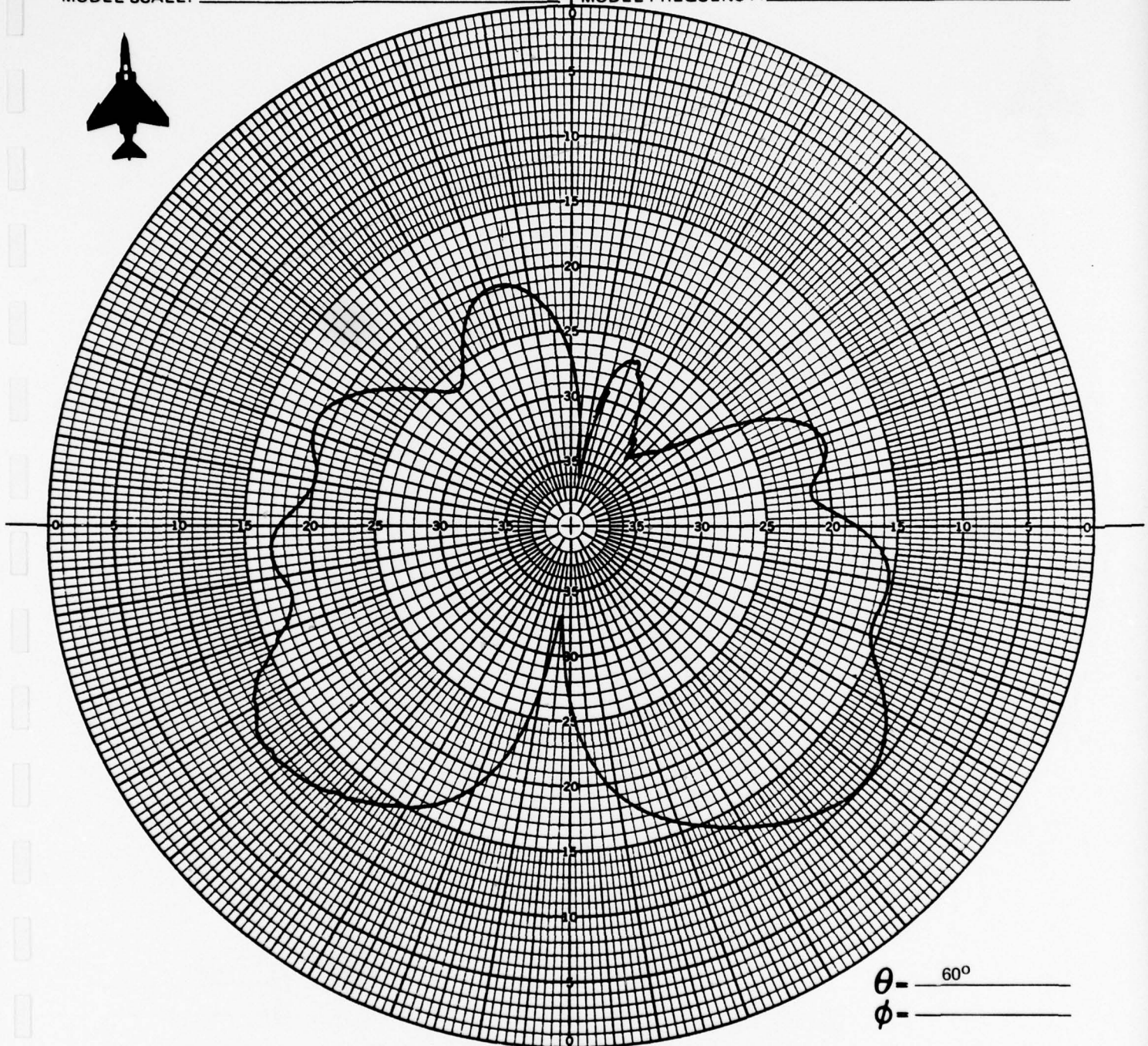
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 4-21-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 42 MHz
MODEL FREQUENCY: 210 MHz



θ - 60°
 ϕ - _____

CONFIGURATION: 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: E ϕ ☒ E θ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

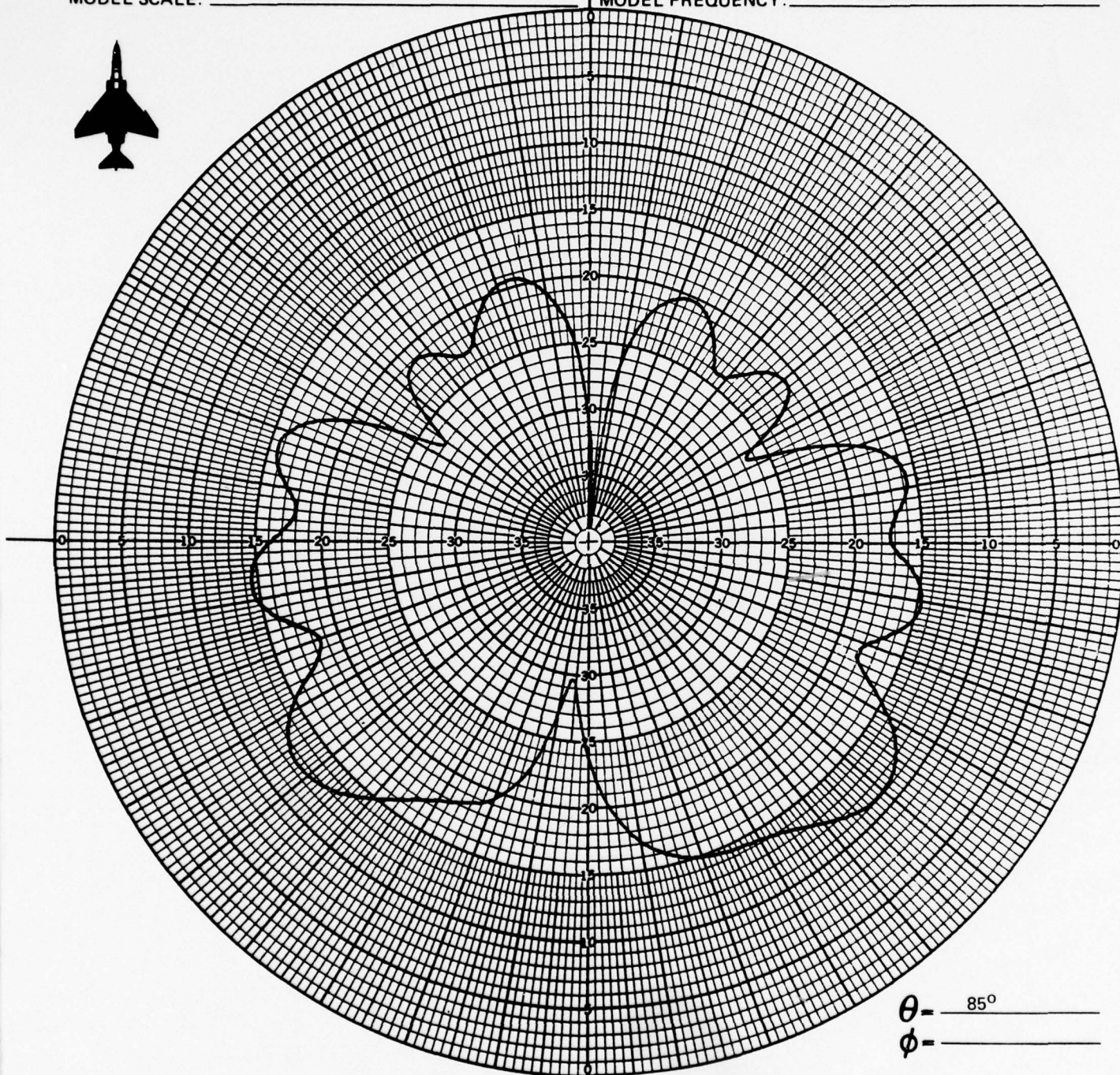
TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 4-21-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 42 MHz
MODEL FREQUENCY: _____ 210 MHz



θ = 85°
 ϕ = _____

CONFIGURATION: _____ 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

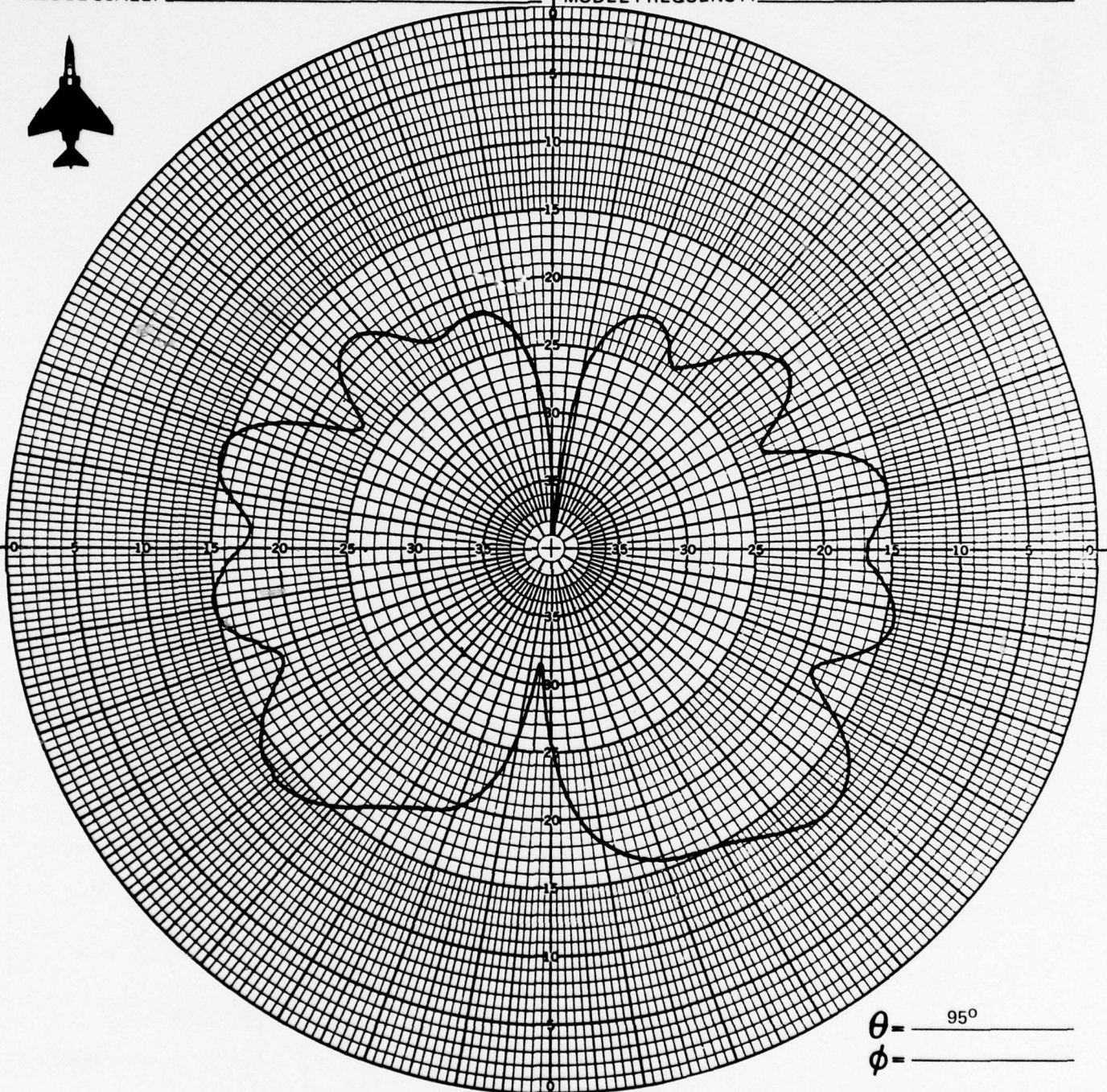
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: 4-21-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 42 MHz
MODEL FREQUENCY: _____ 210 MHz



θ - 95°
 ϕ - _____

CONFIGURATION: _____ 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: E ϕ ☒ E θ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: 4-21-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE

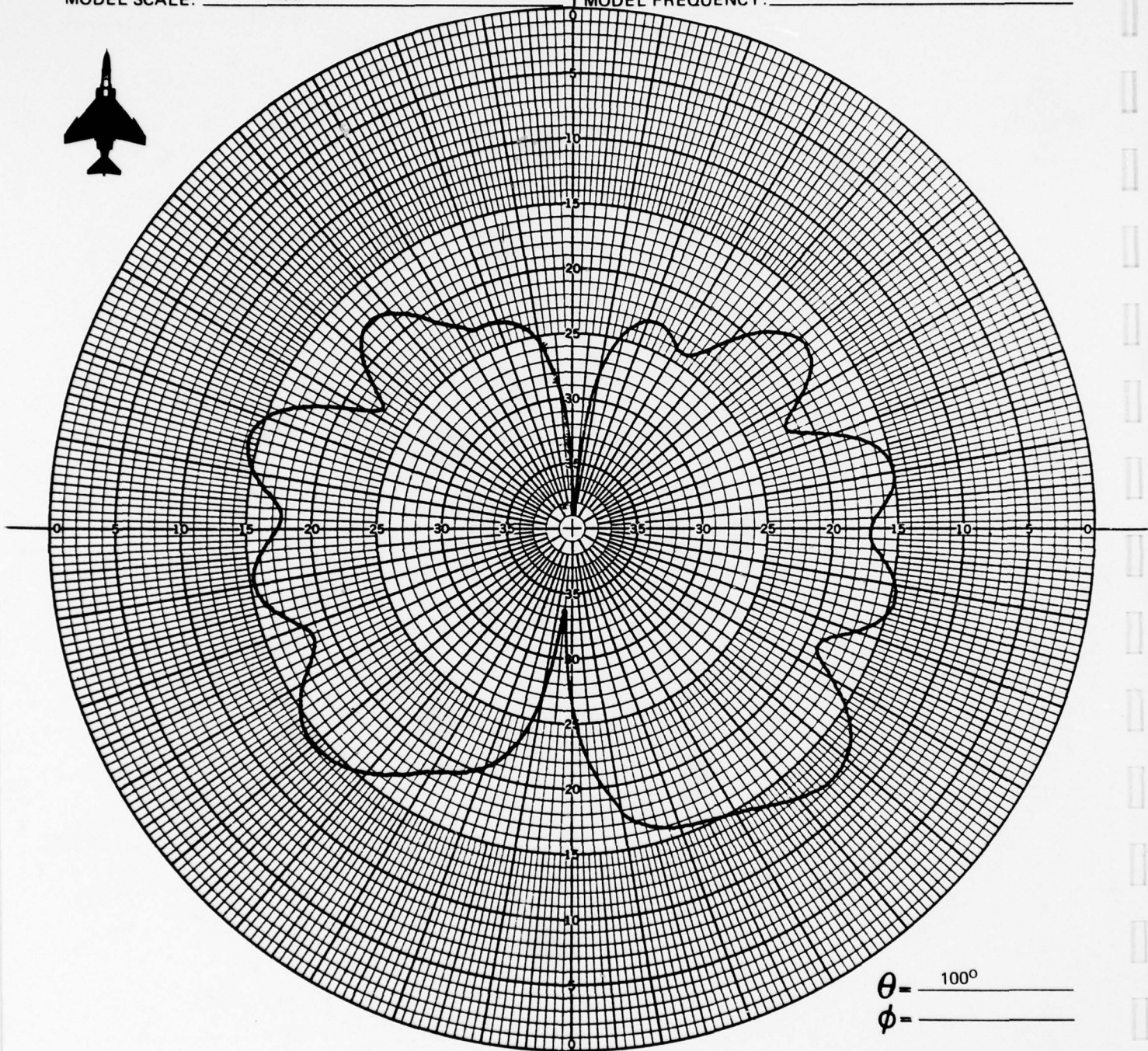
ANTENNA LOCATION: _____ FINCAP

MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)

FULL SCALE FREQUENCY: _____ 42 MHz

MODEL FREQUENCY: _____ 210 MHz



θ - 100°
 ϕ - _____

CONFIGURATION: _____ 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM

DATE: _____ 4-21-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE

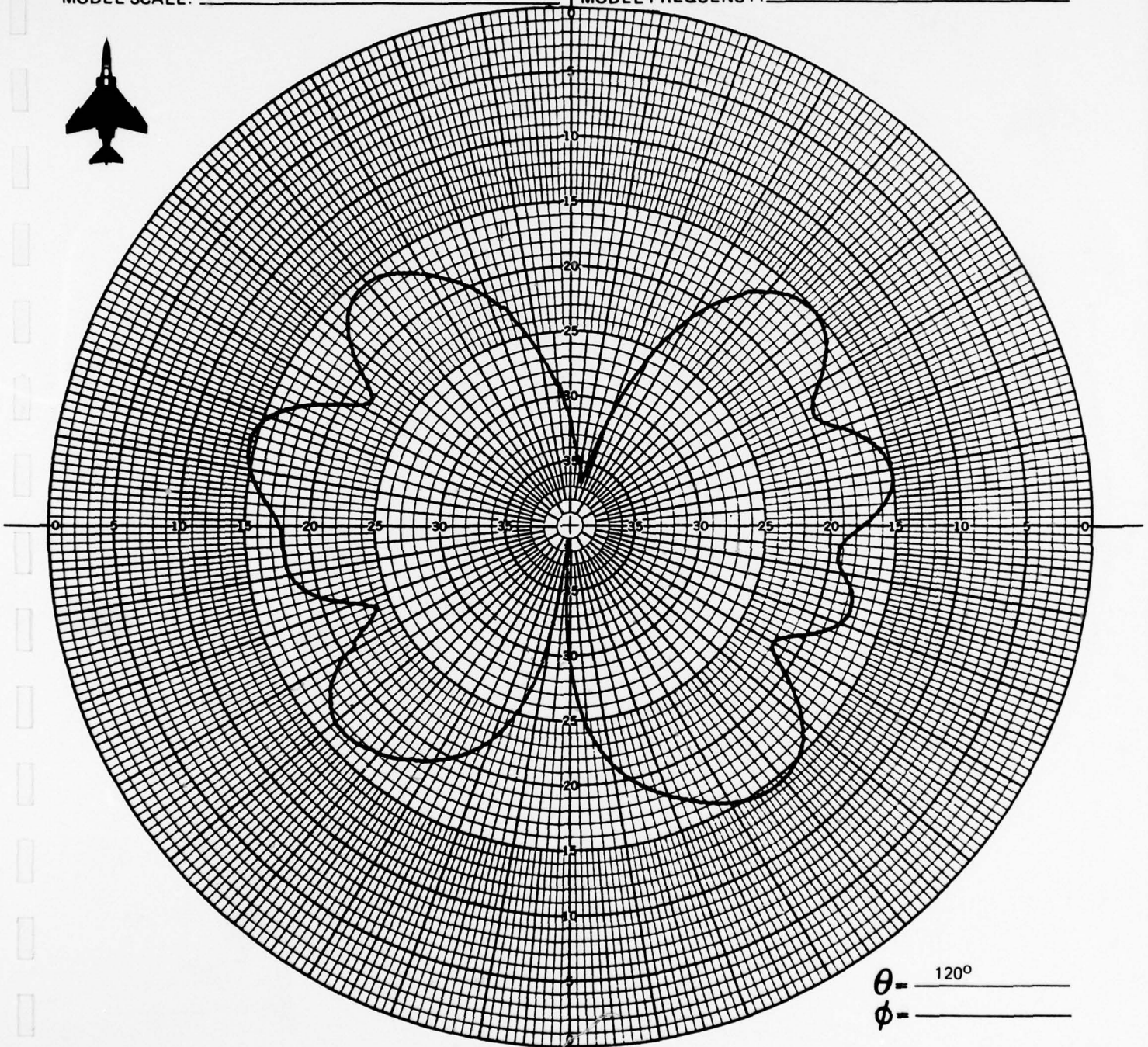
ANTENNA LOCATION: _____ FINCAP

MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)

FULL SCALE FREQUENCY: _____ 42 MHz

MODEL FREQUENCY: _____ 210 MHz



θ - 120°
 ϕ - _____

CONFIGURATION: _____ 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: E ϕ ☒ E θ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

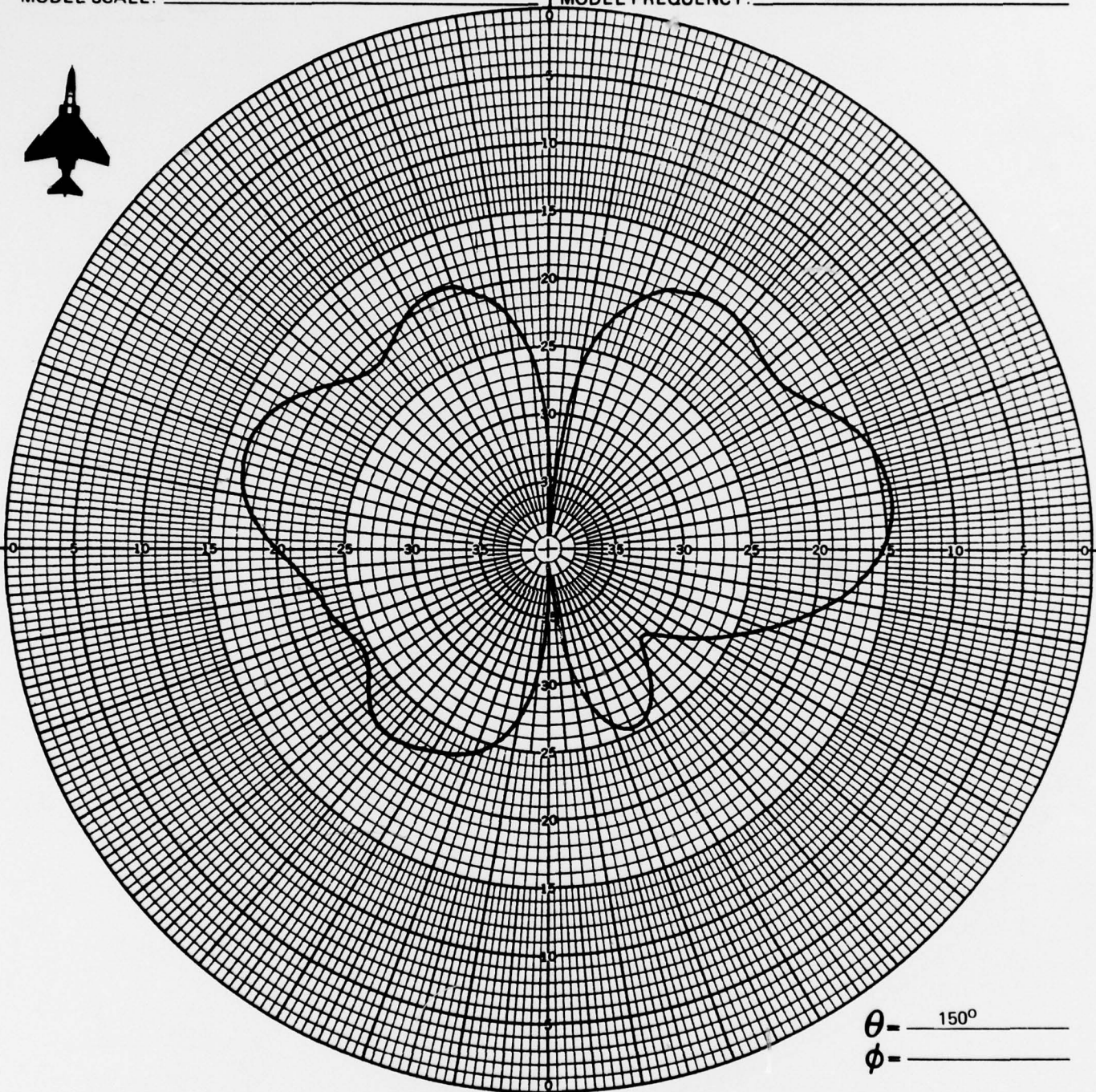
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM _____ DATE: _____ 4-21-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 42 MHz
MODEL FREQUENCY: _____ 210 MHz



θ - 150°
 ϕ - _____

CONFIGURATION: _____ 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

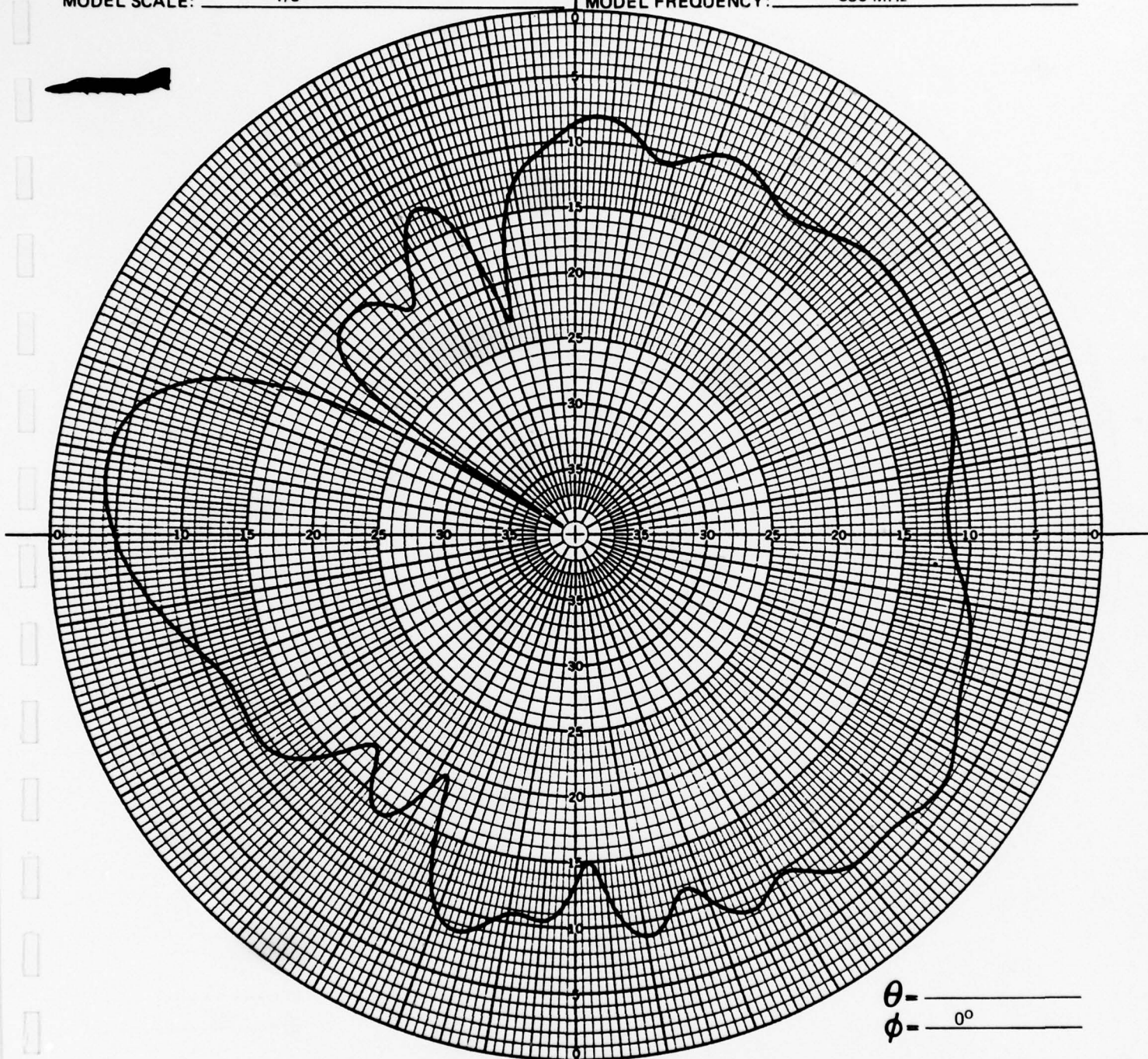
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 4-21-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 76 MHz
MODEL FREQUENCY: 380 MHz



θ - _____
 ϕ - 0°

CONFIGURATION: 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

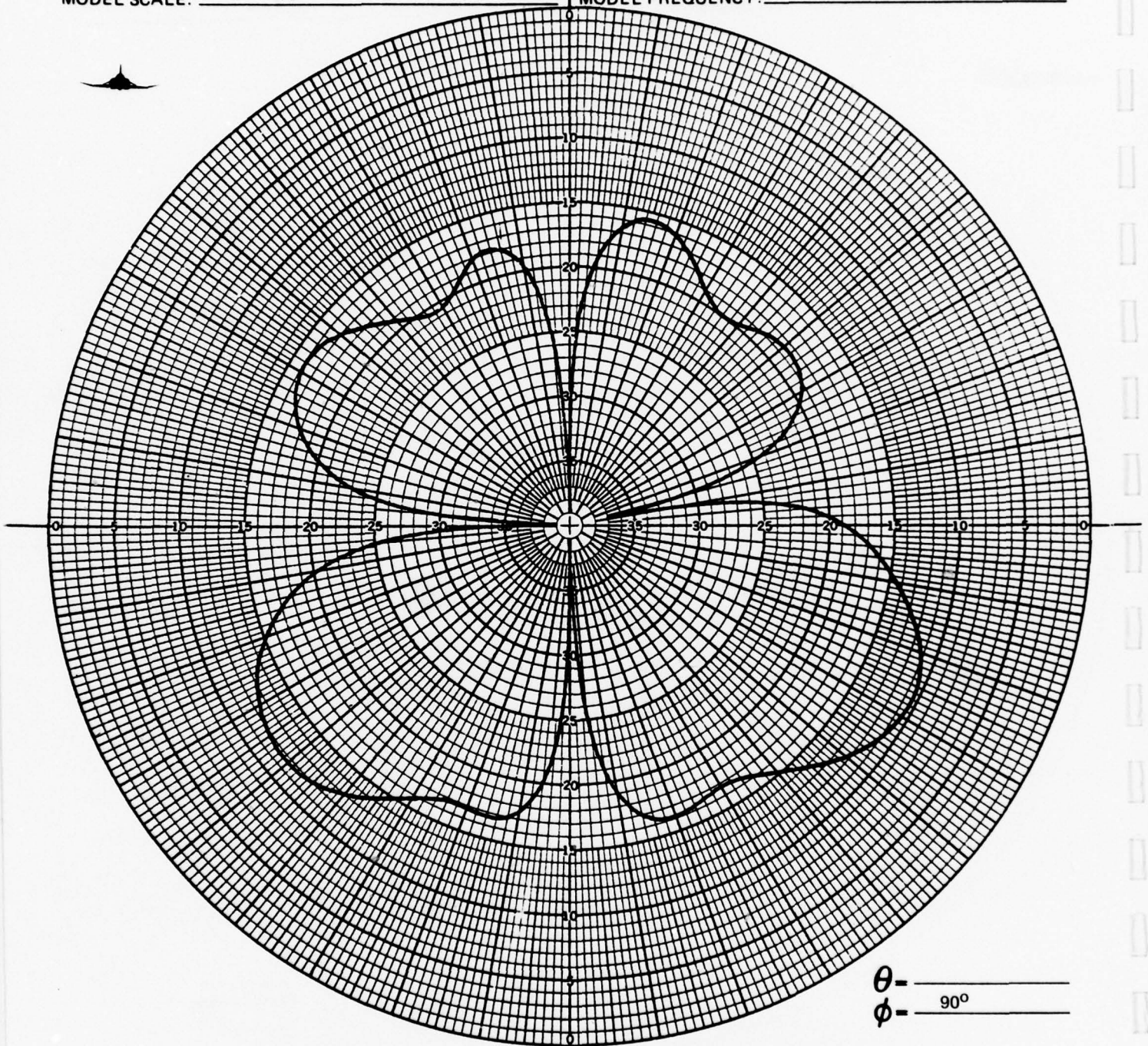
TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 4-20-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 76 MHz
MODEL FREQUENCY: _____ 380 MHz



θ - _____
 ϕ - _____ 90°

CONFIGURATION: _____ 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

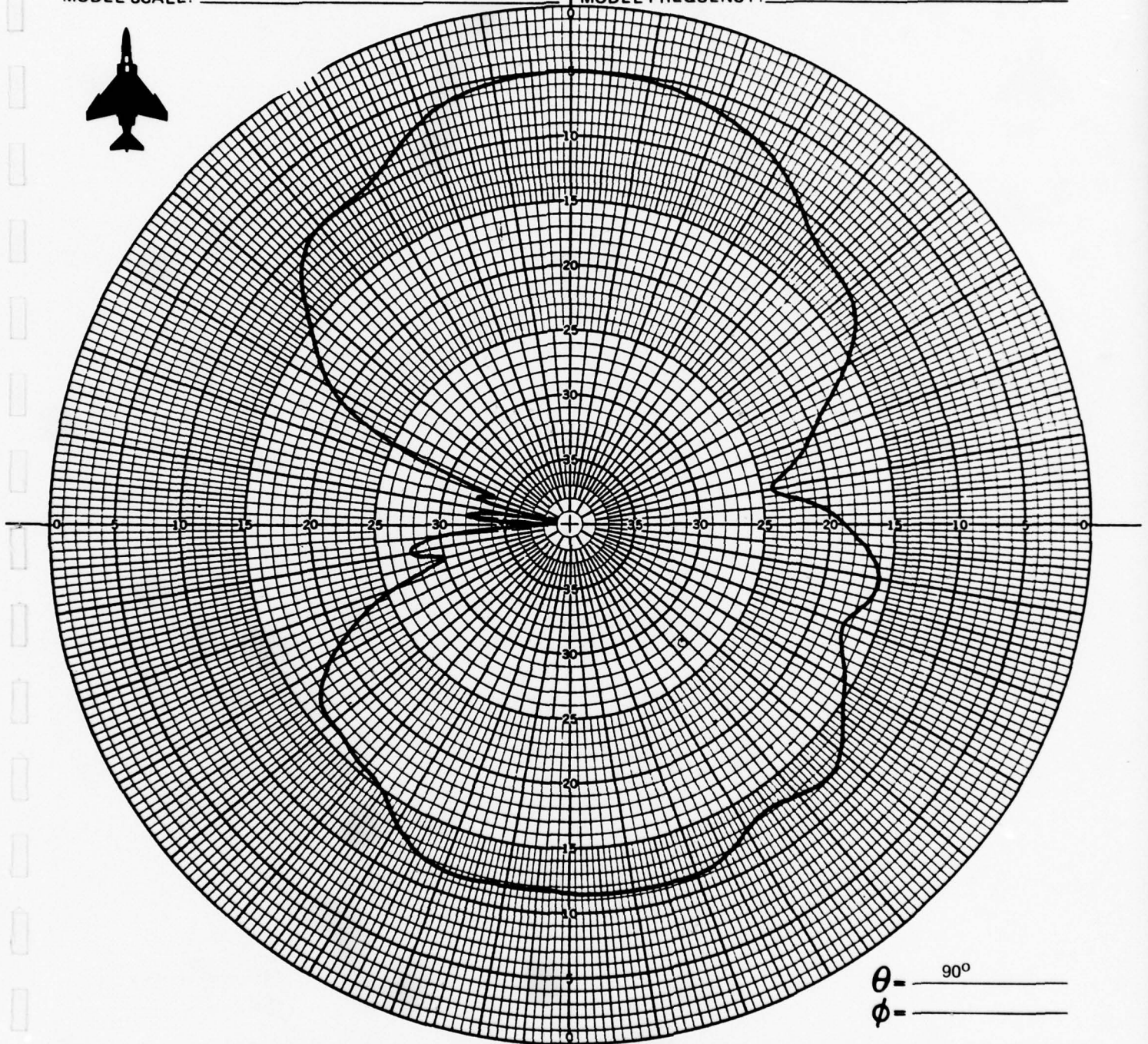
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: 4-20-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 76 MHz
MODEL FREQUENCY: _____ 380 MHz



θ - _____ 90°
 ϕ - _____

CONFIGURATION: _____ 29
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: _____ 4-20-77

ANTENNA: FLYING PROTOTYPE

ANTENNA LOCATION: FINCAP

MODEL SCALE: 1/5

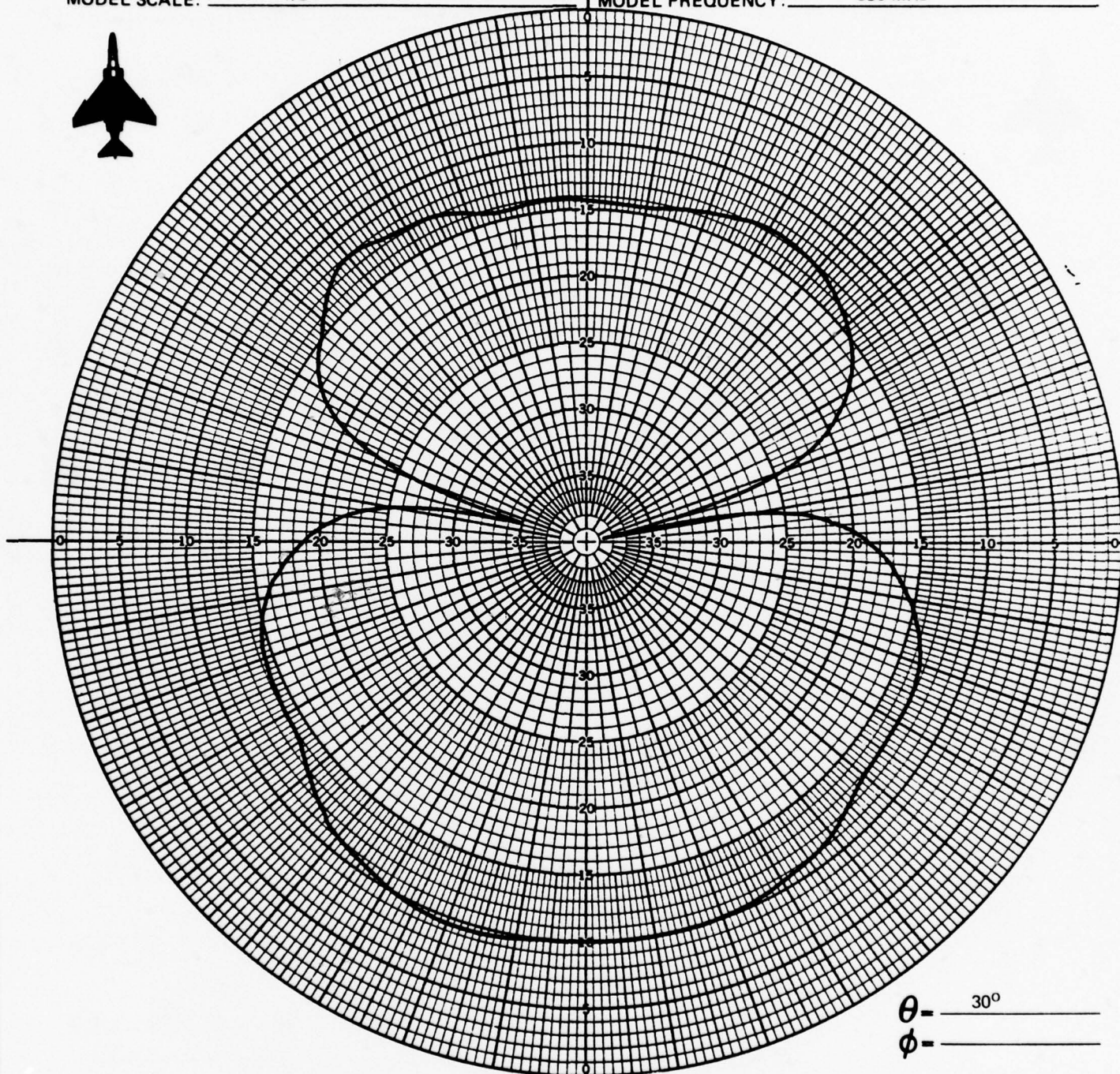
DOCUMENT _____

REVISION _____

TEST IDENT.: 703-174 (F-4)

FULL SCALE FREQUENCY: 76 MHz

MODEL FREQUENCY: 380 MHz



θ - 30°

ϕ - _____

CONFIGURATION: 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

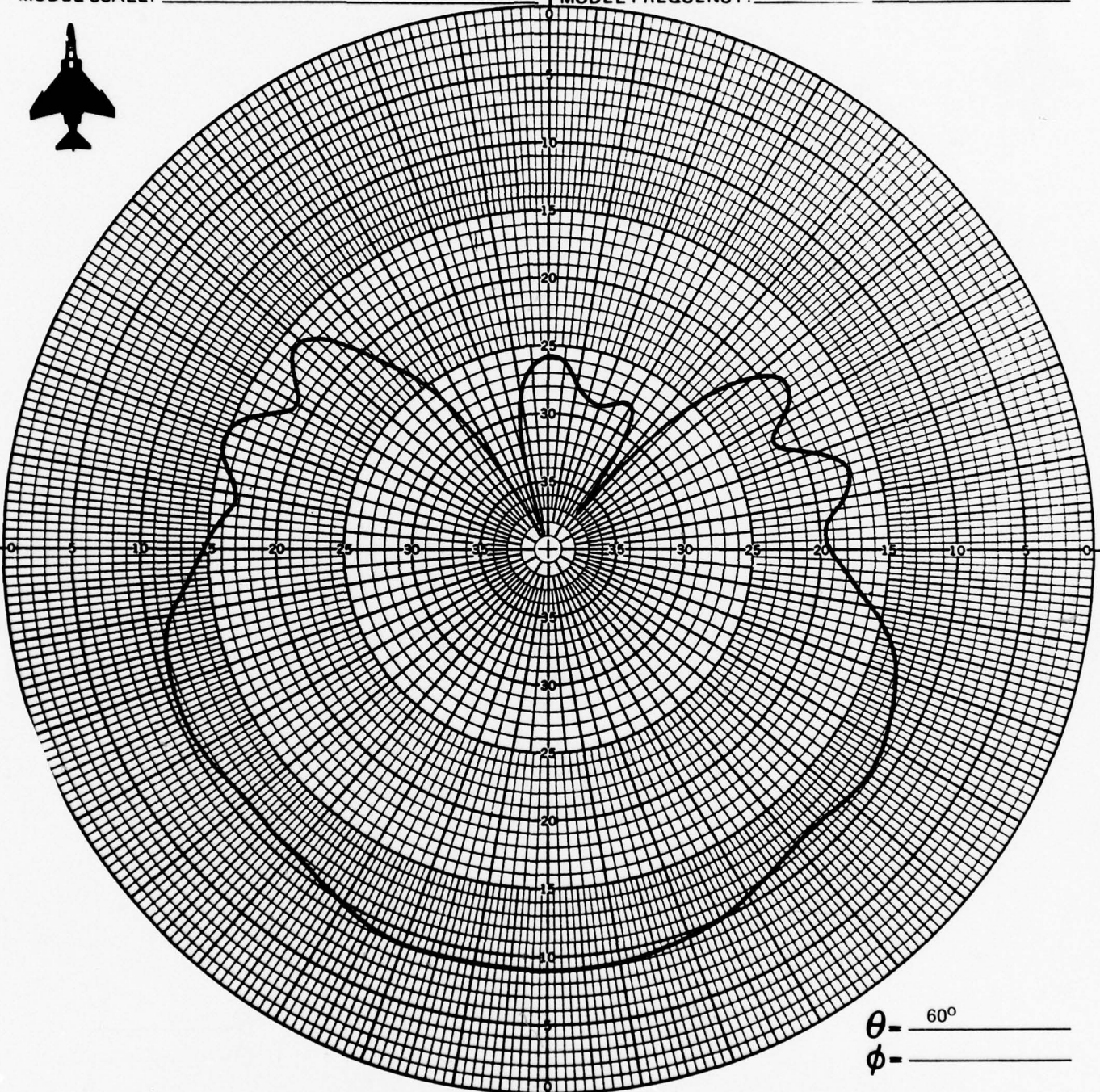
TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 4-20-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 76 MHz
MODEL FREQUENCY: _____ 380 MHz



θ - 60°
 ϕ - _____

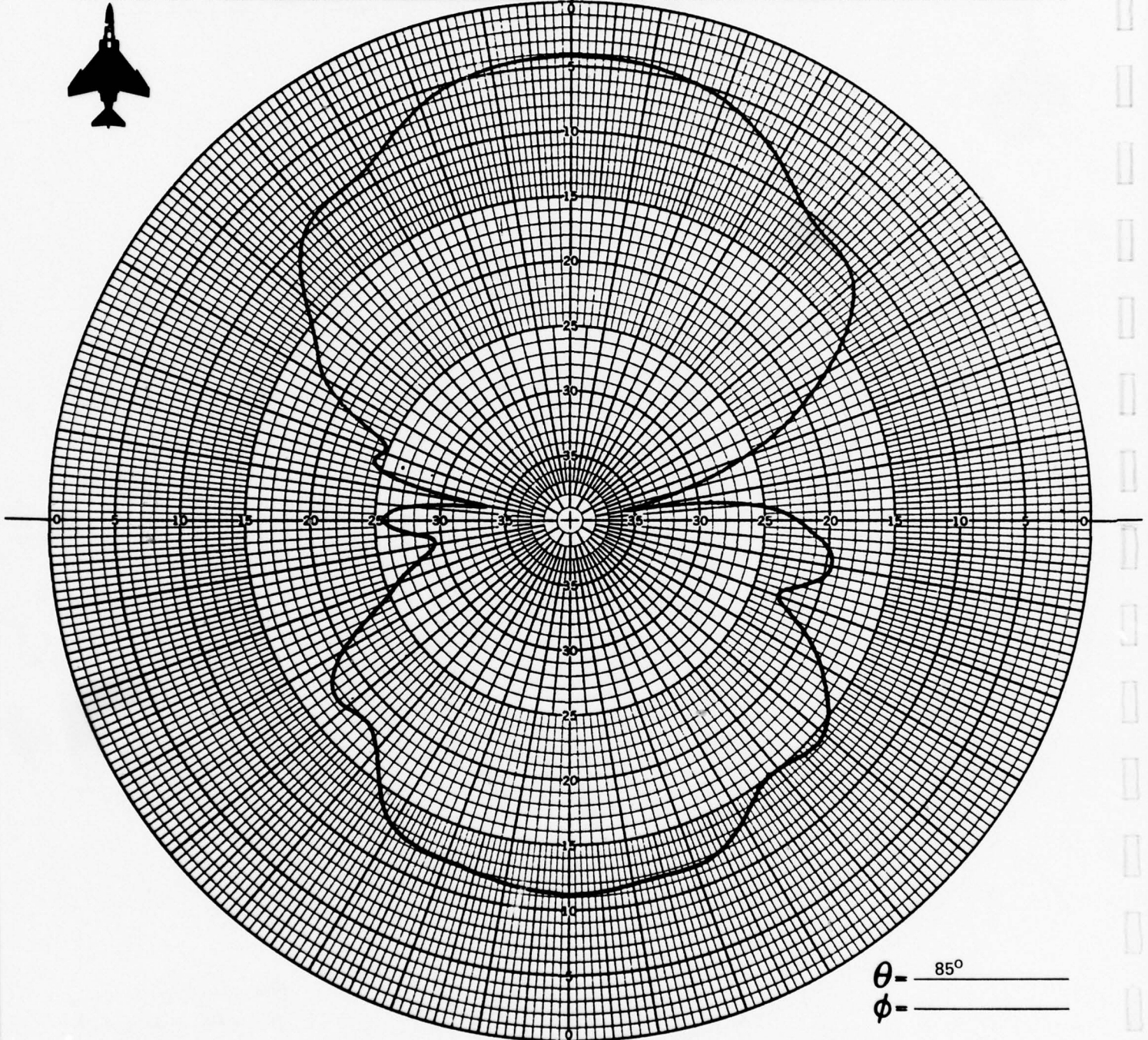
CONFIGURATION: _____ 29
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM _____ DATE: _____

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 76 MHz
MODEL FREQUENCY: _____ 380 MHz



θ = 85°
 ϕ = _____

CONFIGURATION: _____ 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: 4-20-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE

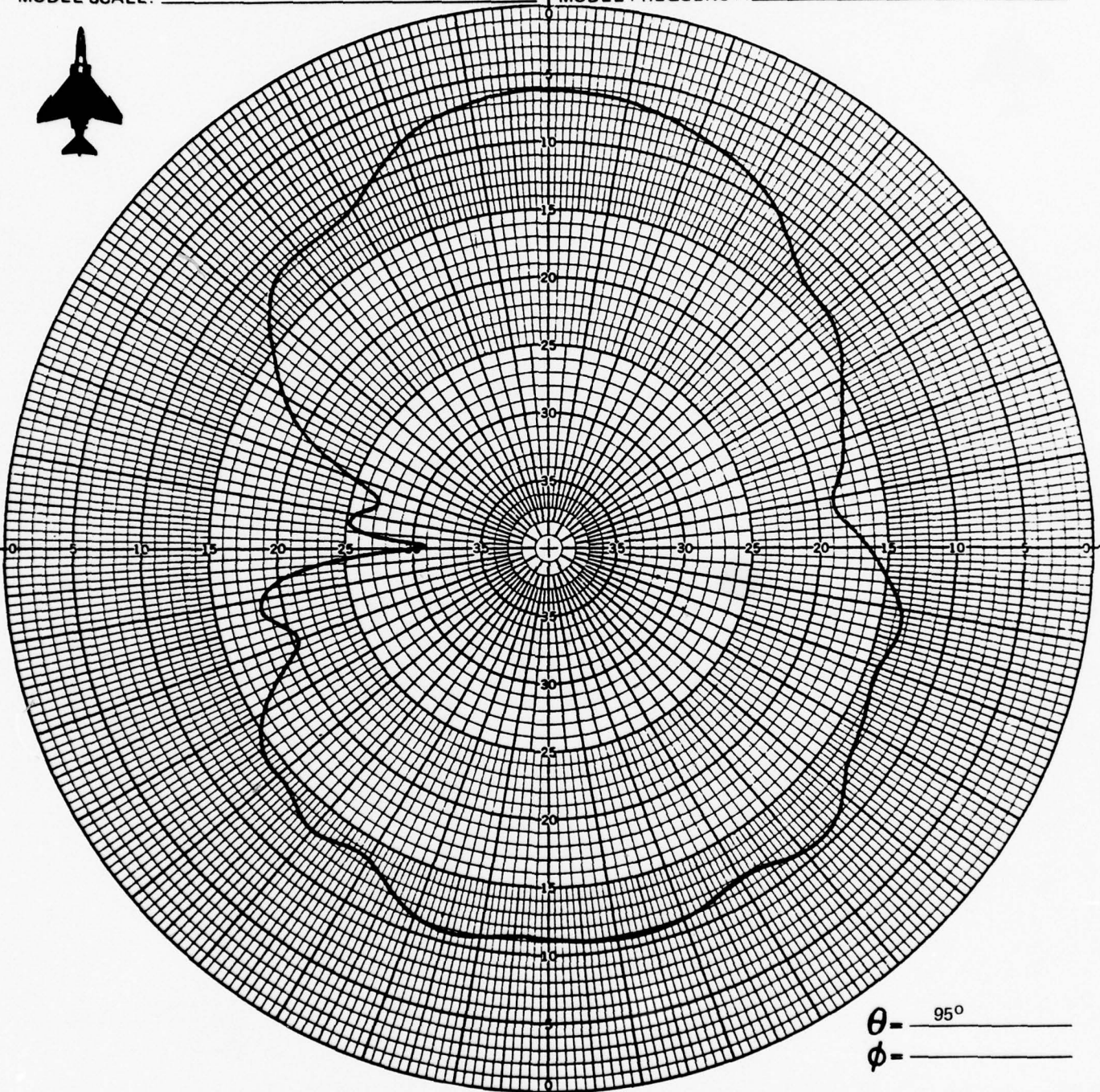
ANTENNA LOCATION: _____ FINCAP

MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)

FULL SCALE FREQUENCY: _____ 76 MHz

MODEL FREQUENCY: _____ 380 MHz



θ - 95°
 ϕ - _____

CONFIGURATION: _____ 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: 4-20-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE

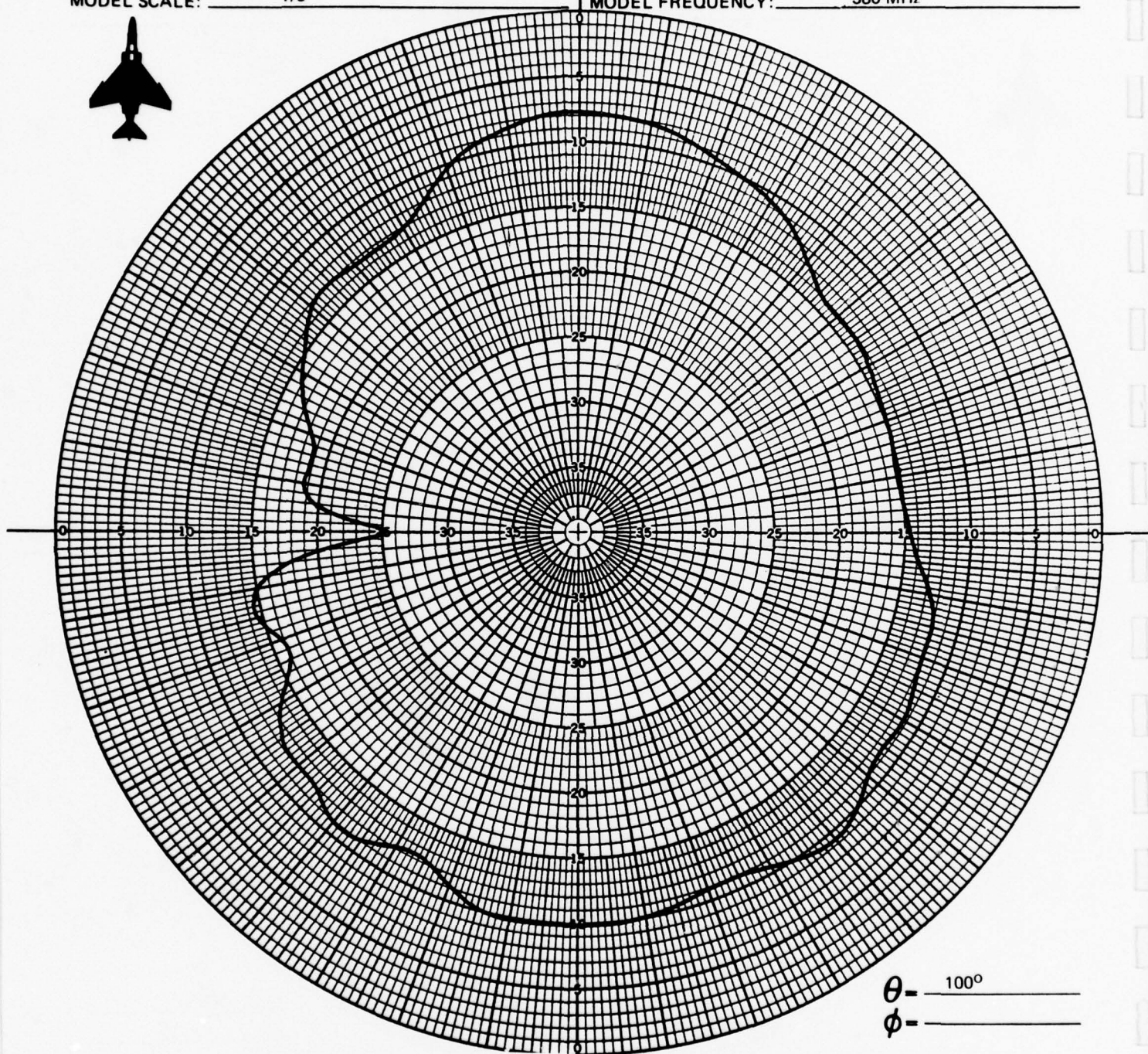
ANTENNA LOCATION: _____ FINCAP

MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)

FULL SCALE FREQUENCY: _____ 76 MHz

MODEL FREQUENCY: _____ 380 MHz



θ - 100°
 ϕ - _____

CONFIGURATION: _____ 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

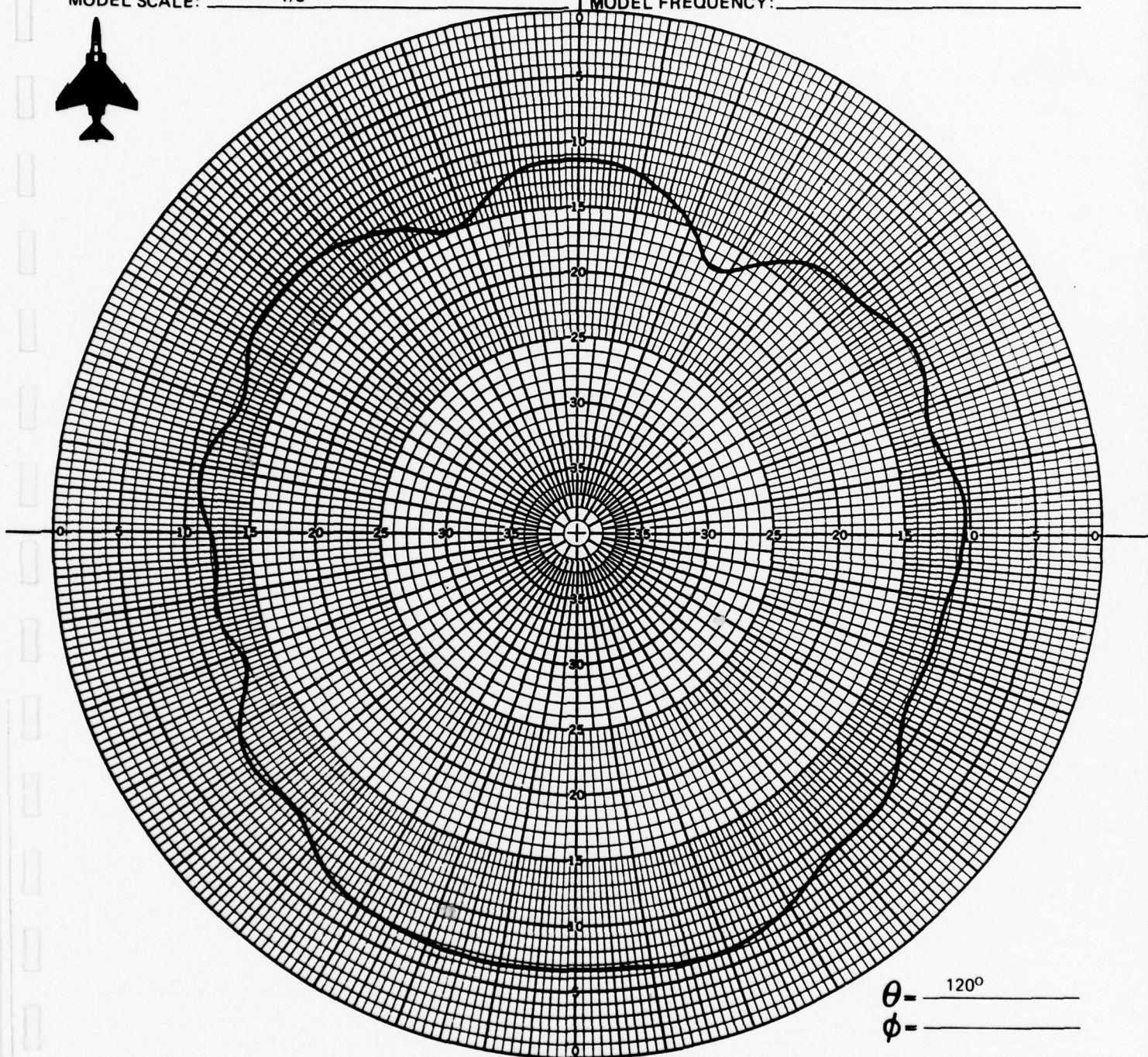
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: 4-20-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 76 MHz
MODEL FREQUENCY: 380 MHz



θ - 120°
 ϕ - _____

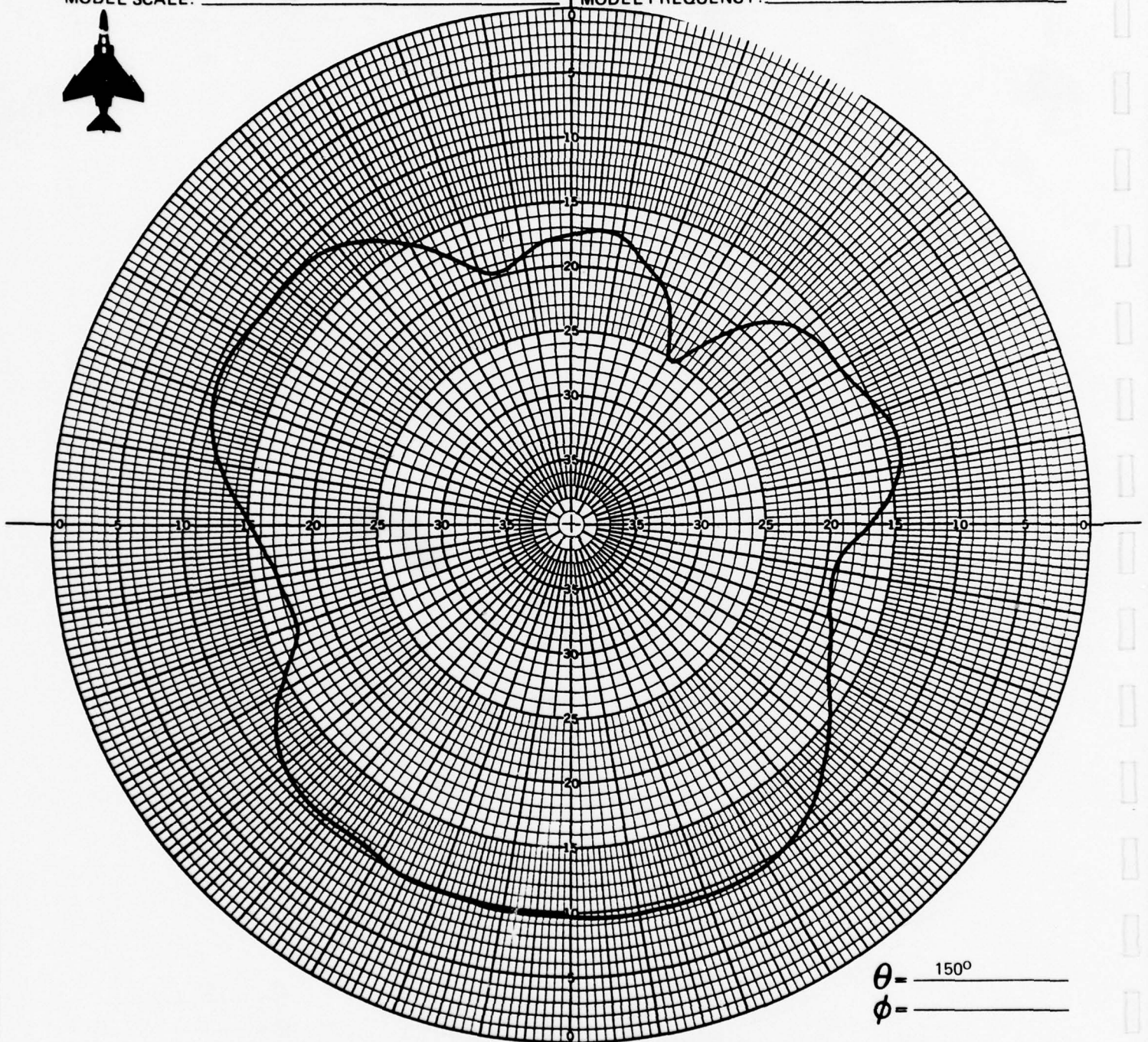
CONFIGURATION: 29
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: ☒ $E\phi$ ☐ $E\theta$ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: 285 FT
OBSERVER: PN, BM DATE: 4-20-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 76 MHz
MODEL FREQUENCY: 380 MHz



θ - 150°
 ϕ - _____

CONFIGURATION: 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

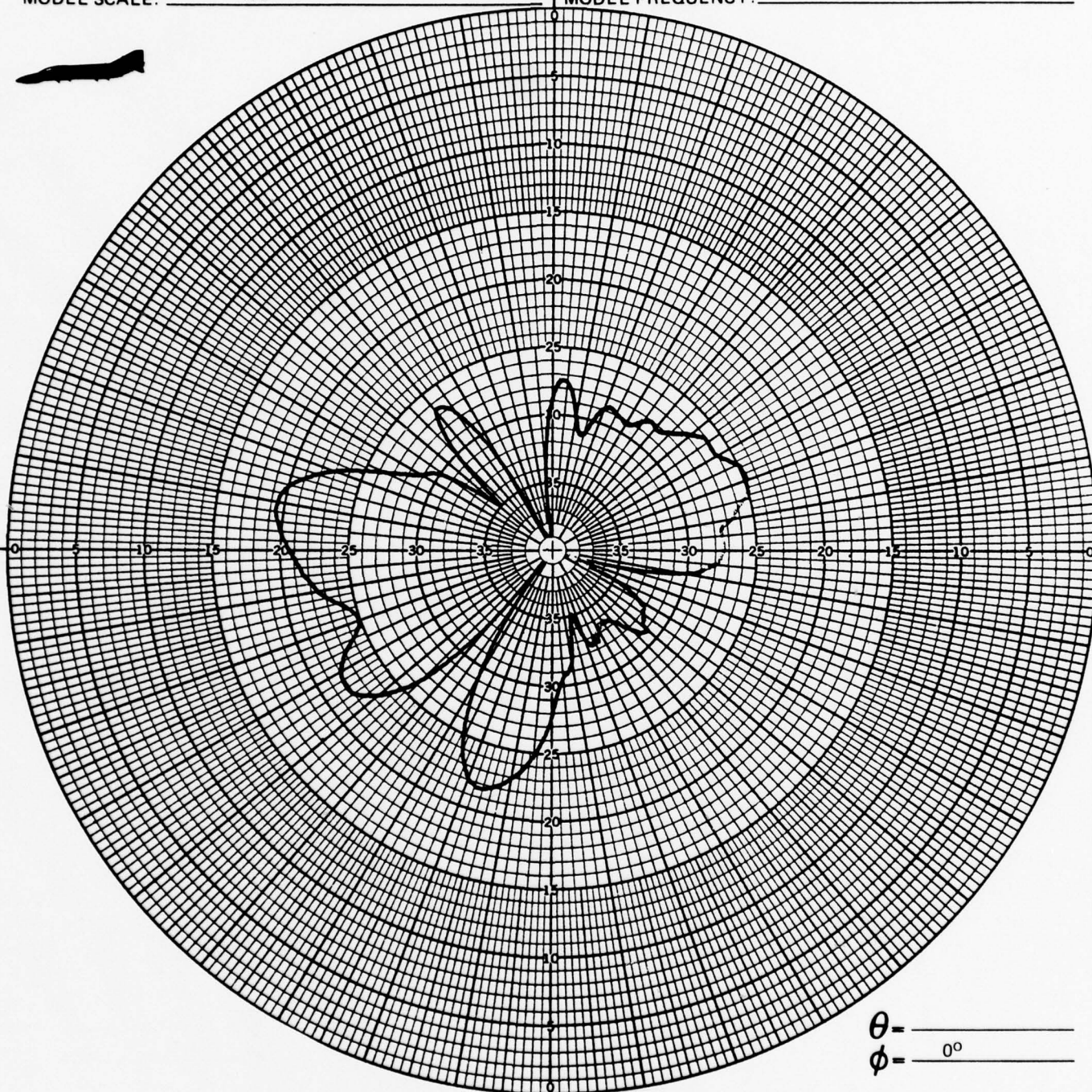
TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 4-20-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 76 MHz
MODEL FREQUENCY: _____ 380 MHz



CONFIGURATION: _____ 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: E ϕ ☒ E θ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

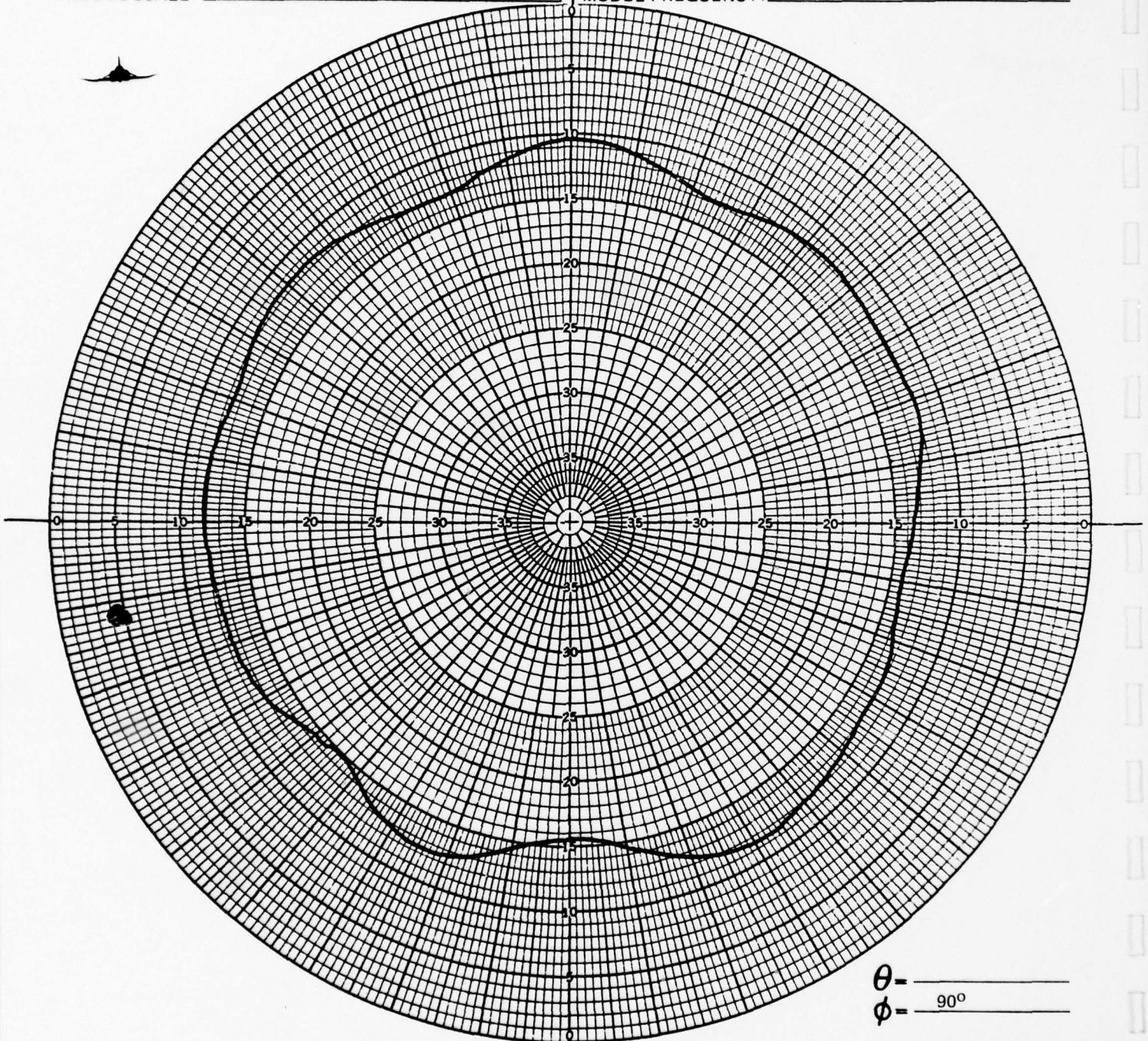
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 4-20-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 76 MHz
MODEL FREQUENCY: 380 MHz



θ - _____
 ϕ - 90°

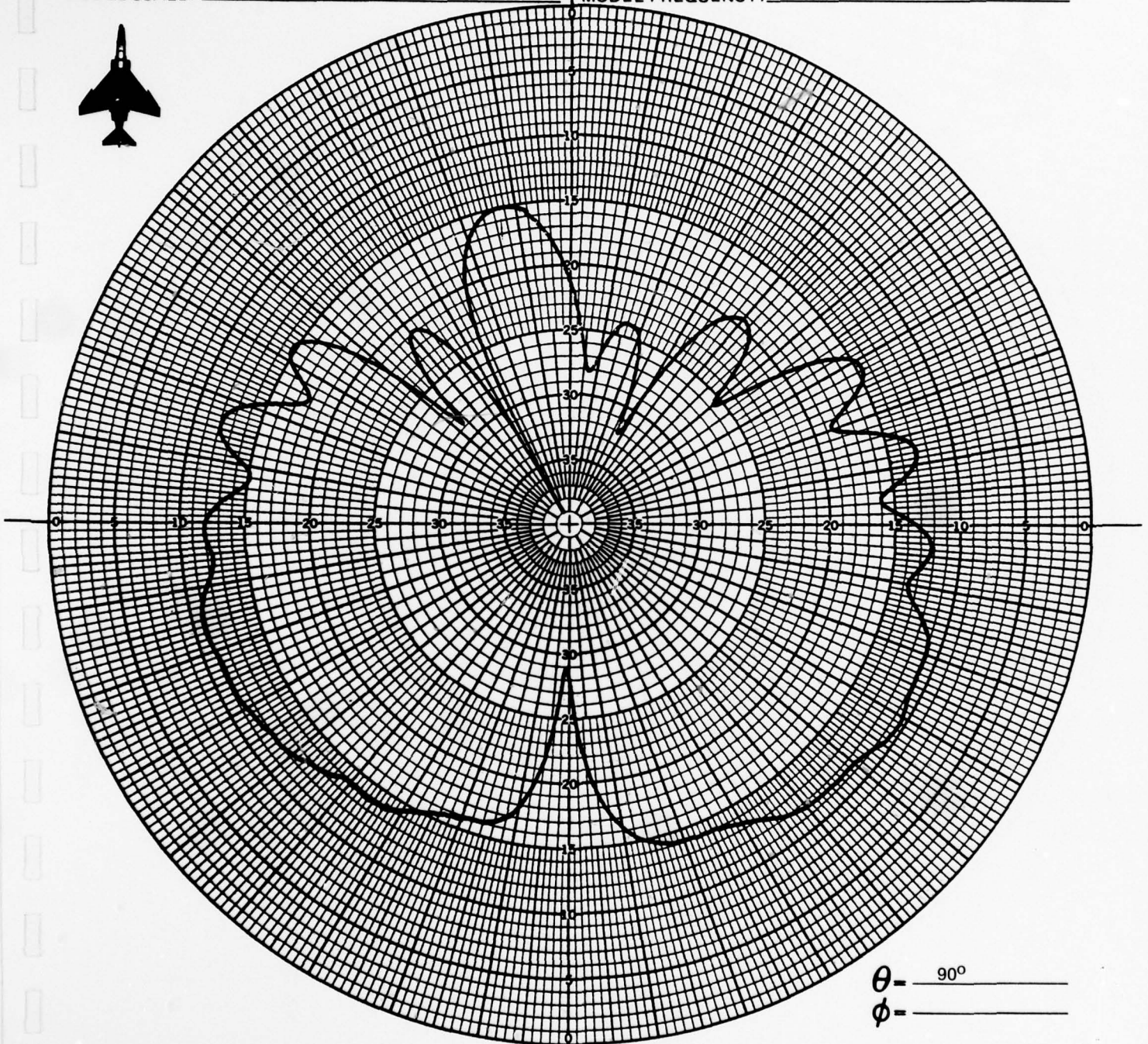
CONFIGURATION: 29
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: 285 FT
OBSERVER: PN, BM DATE: 4-20-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 76 MHz
MODEL FREQUENCY: _____ 380 MHz



θ - 90°
 ϕ -

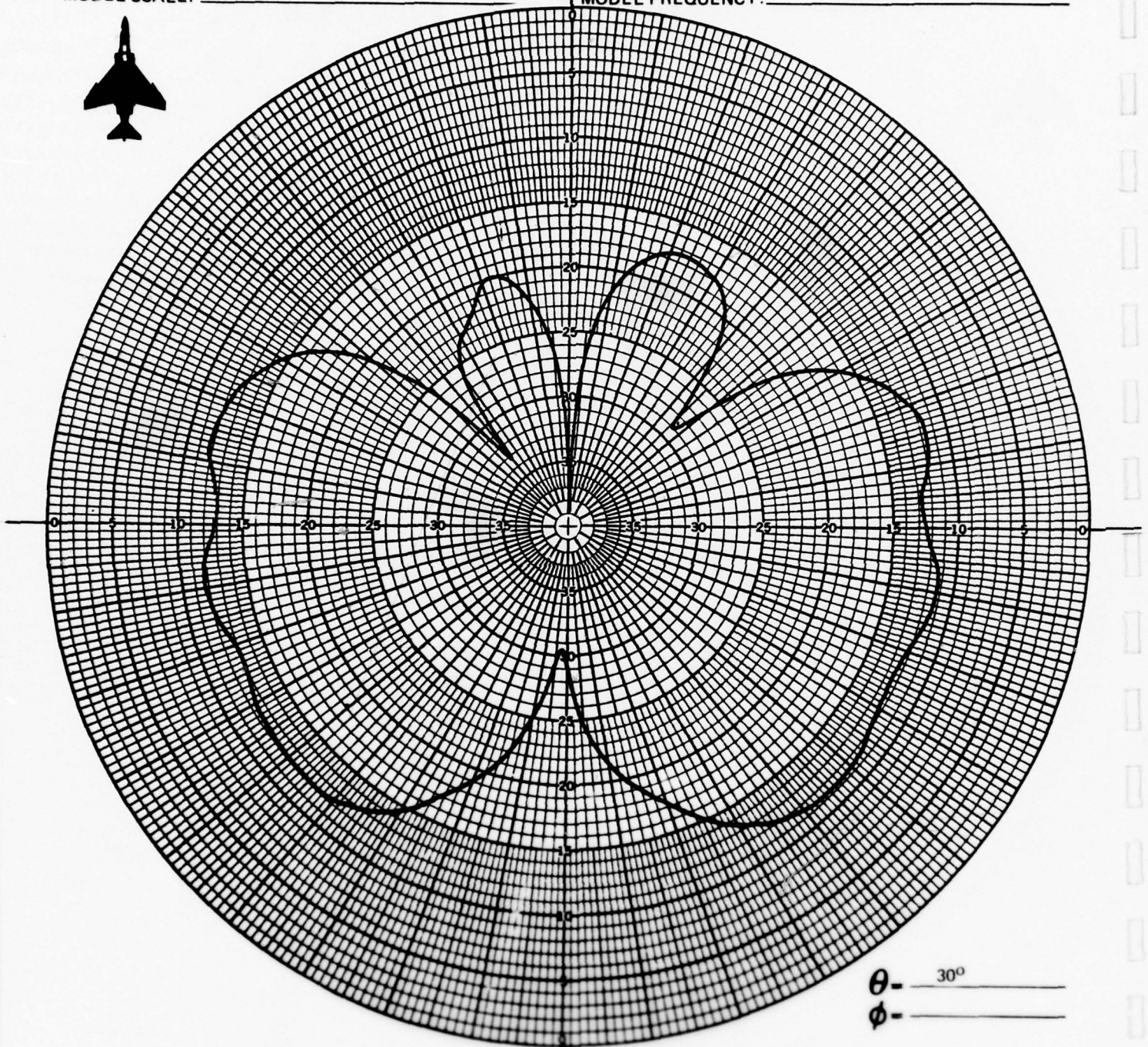
CONFIGURATION: _____ 29
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: 4-20-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 76 MHz
MODEL FREQUENCY: _____ 380 MHz



θ - 30°
 ϕ - _____

CONFIGURATION _____ 29

REMARKS _____

INTEGRATOR COUNT _____

POLARIZATION: ☒ E ☒ E ☐ OTHER _____

PLOTTED IN: RELATIVE dB

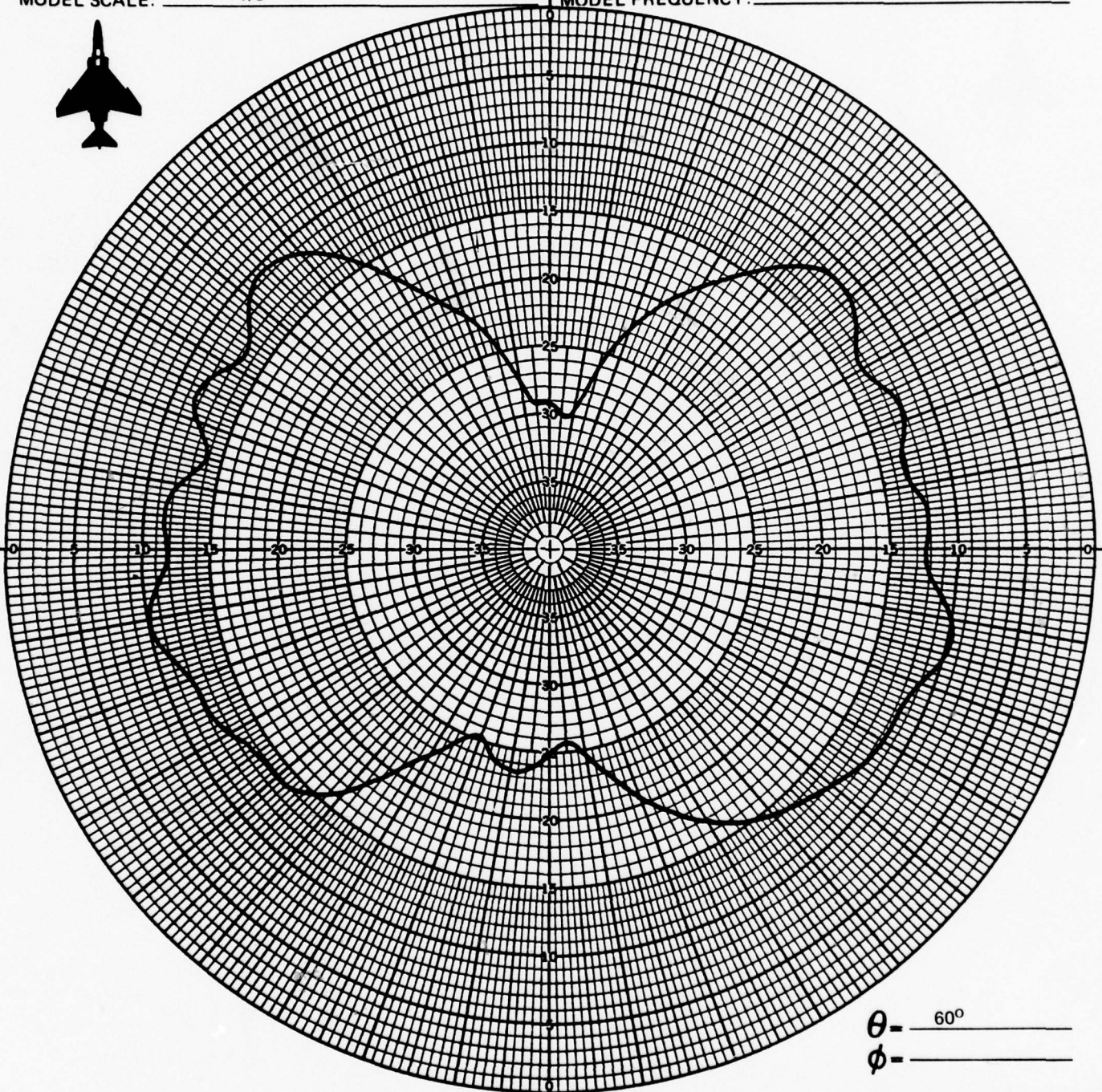
TRANSMISSION DISTANCE _____ 285 FT

OBSERVER _____ PN BM DATE 4-20-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 76 MHz
MODEL FREQUENCY: _____ 380 MHz



θ - 60°
 ϕ - _____

CONFIGURATION: _____ 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: E ☐ ϕ ☒ E θ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

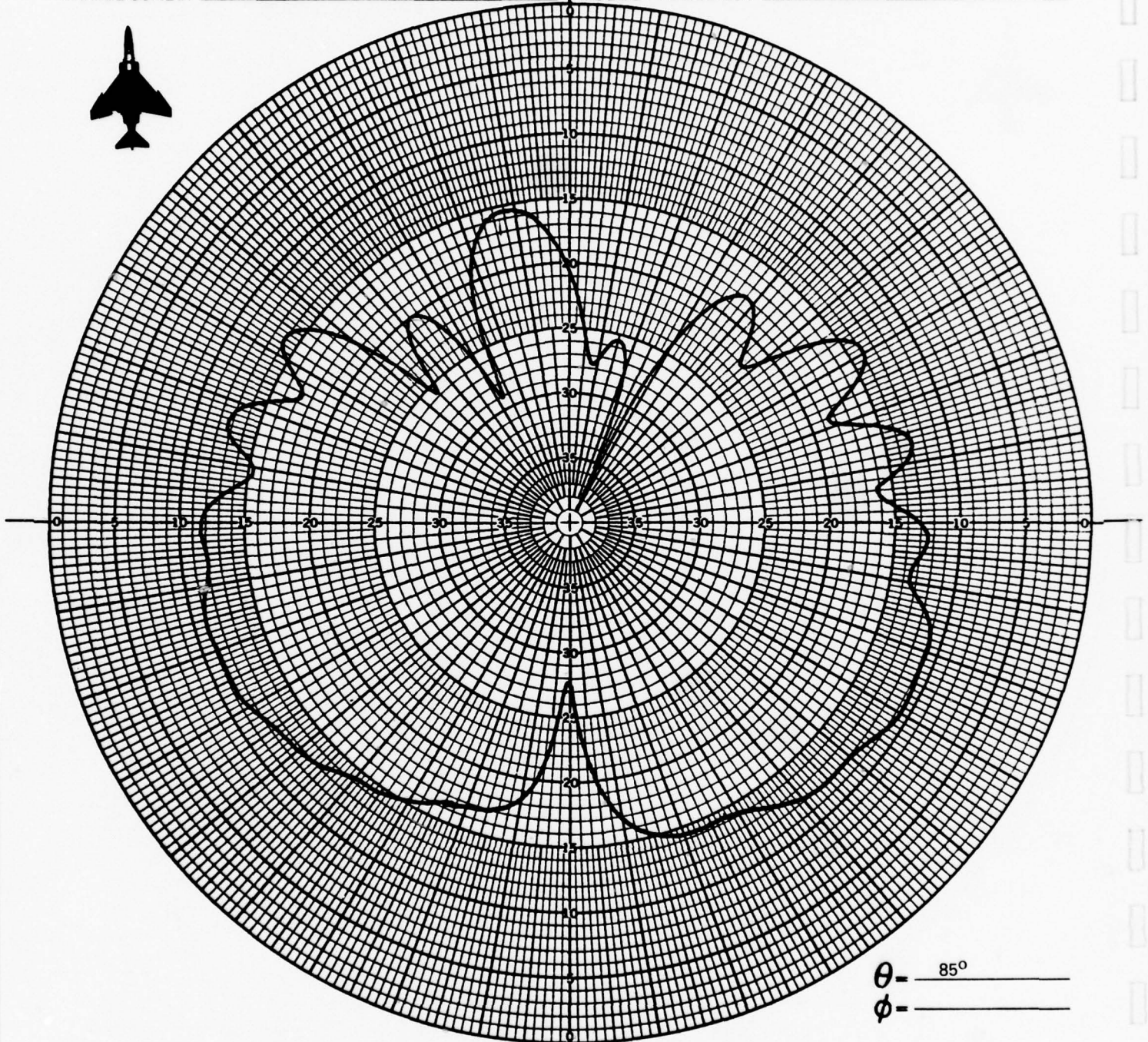
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: 4-20-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 76 MHz
MODEL FREQUENCY: 380 MHz



θ - 85°
 ϕ - _____

CONFIGURATION: 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 4-20-77

ANTENNA: FLYING PROTOTYPE

ANTENNA LOCATION: FINCAP

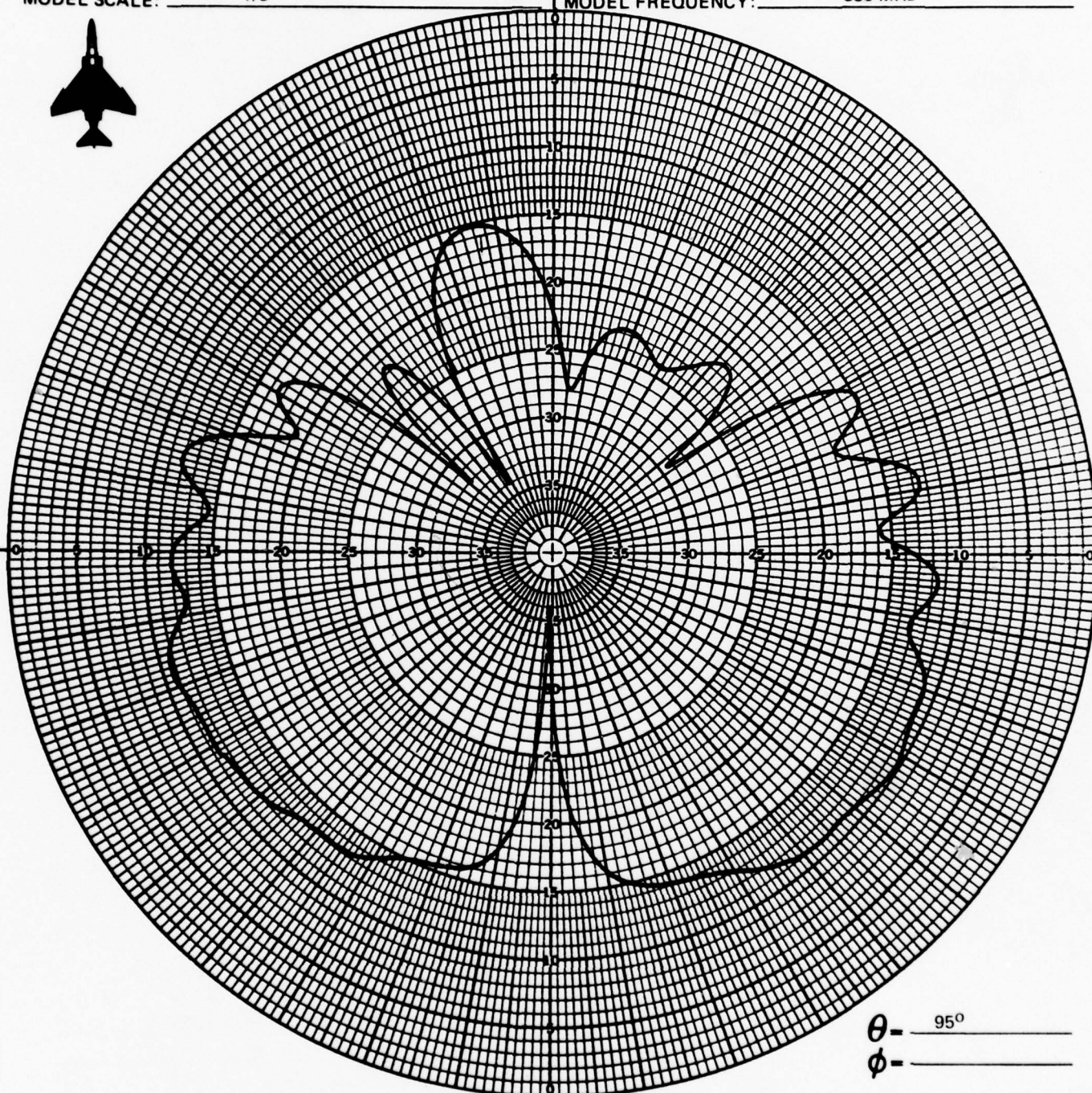
MODEL SCALE: 1/5

DOCUMENT _____
REVISION _____

TEST IDENT.: 703-174 (F-4)

FULL SCALE FREQUENCY: 76 MHz

MODEL FREQUENCY: 380 MHz



θ - 95°
 ϕ - _____

CONFIGURATION: 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

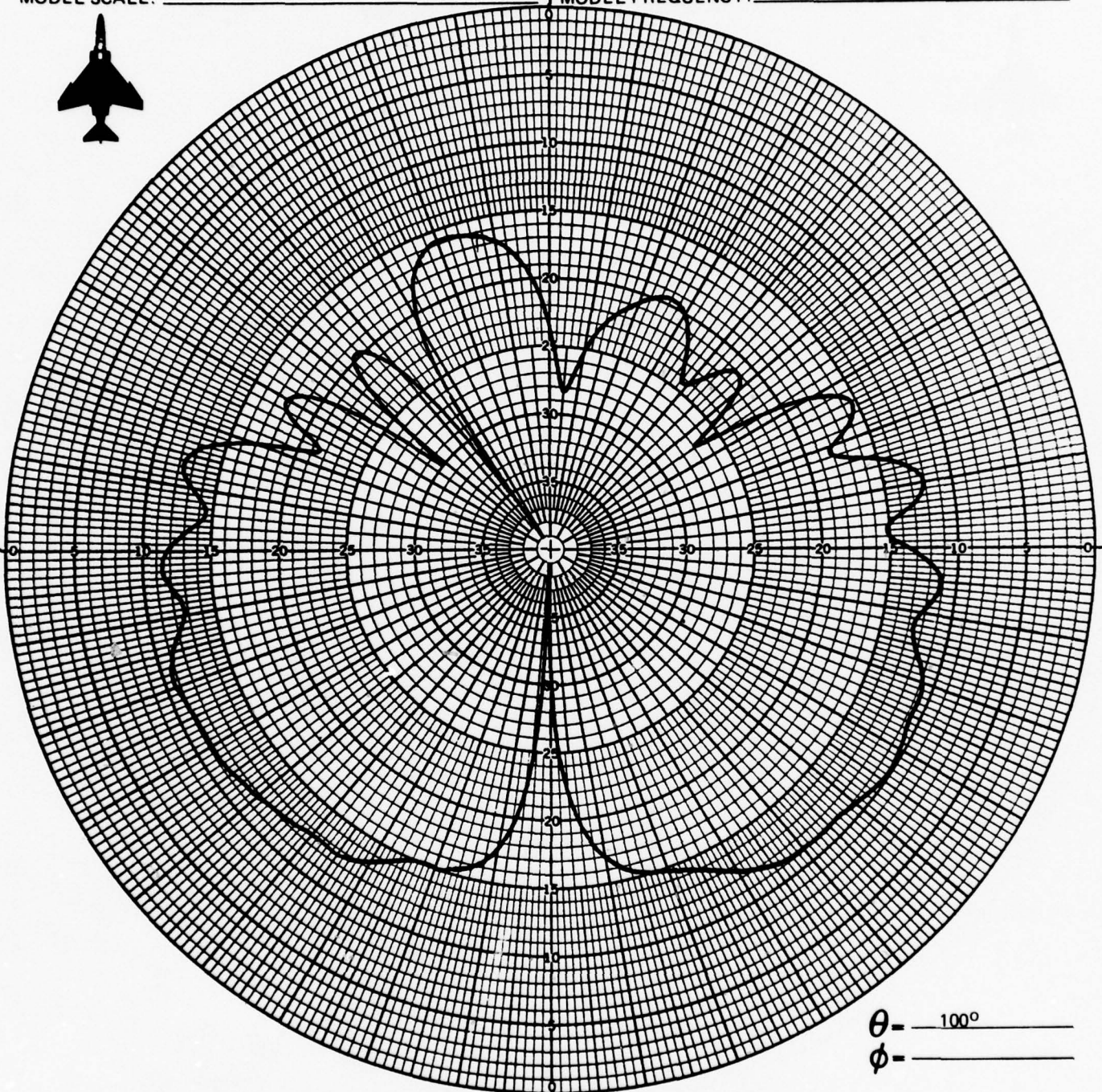
TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 4-20-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 76 MHz
MODEL FREQUENCY: 380 MHz



θ - 100°
 ϕ - _____

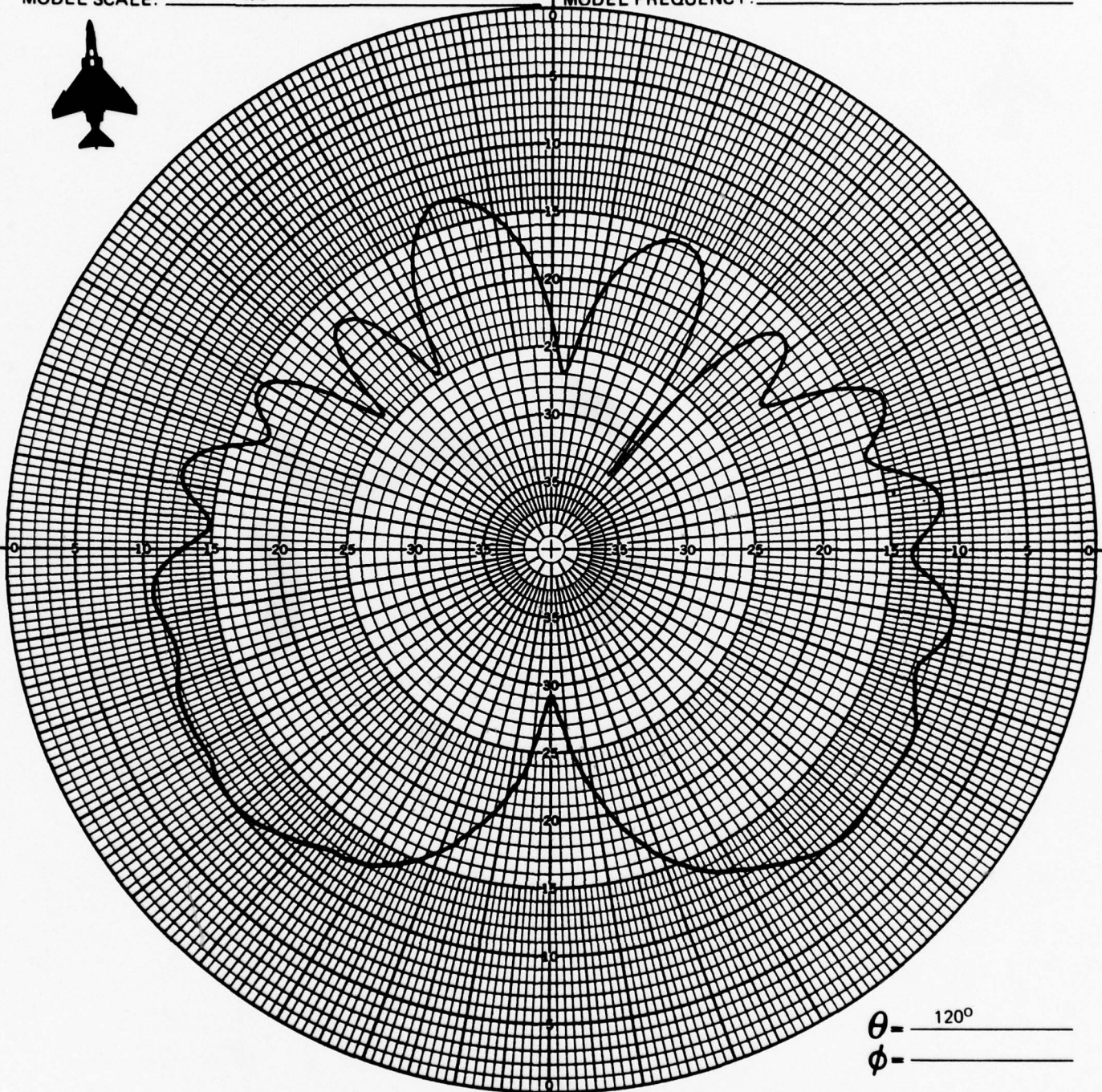
CONFIGURATION: 29
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: E ☒ ϕ ☐ E θ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: 285 FT
OBSERVER: PN, BM DATE: 4-20-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 76 MHz
MODEL FREQUENCY: 380 MHz



θ - 120°
 ϕ - _____

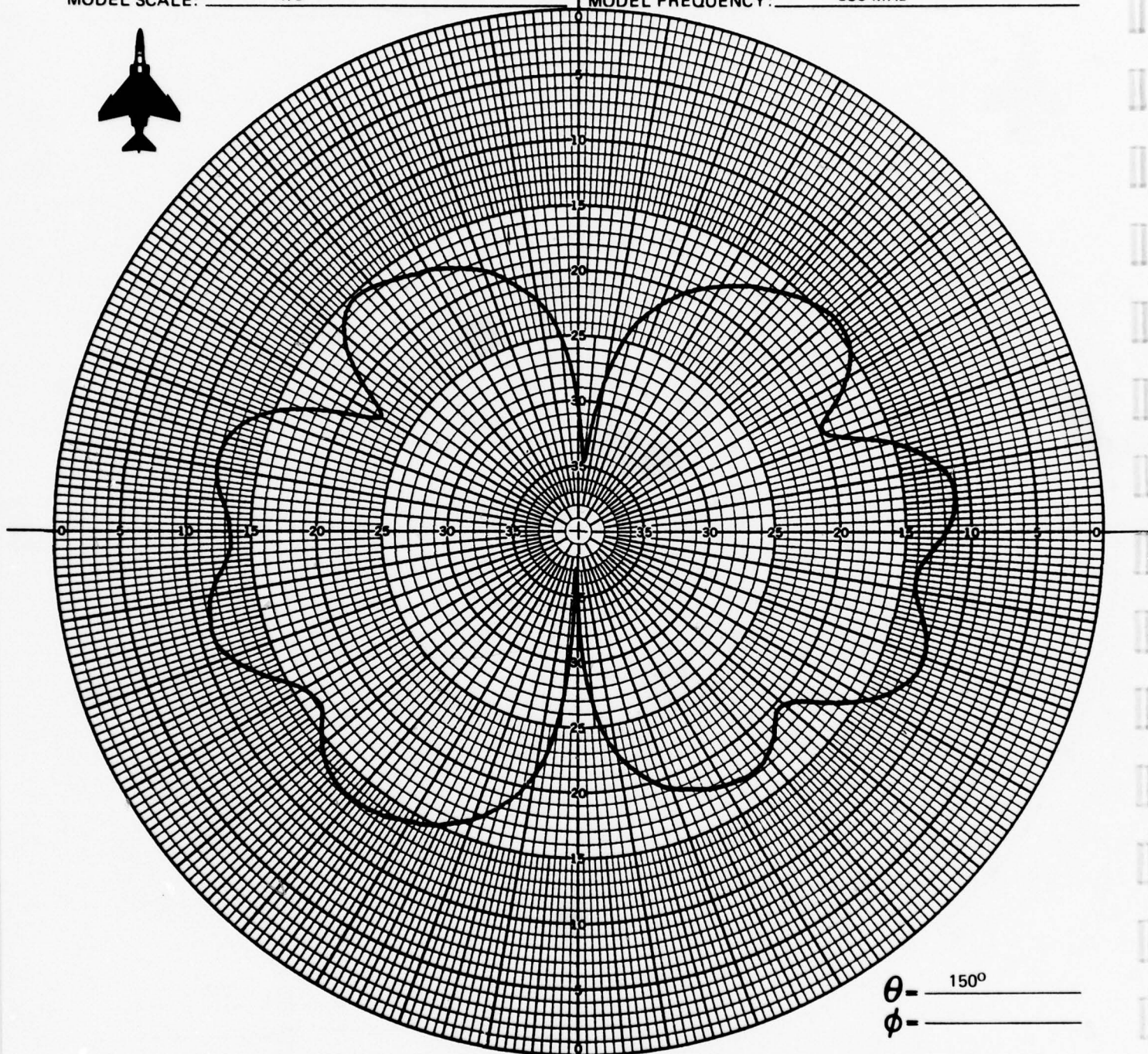
CONFIGURATION: 29
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: 285 FT
OBSERVER: PN, BM DATE: 4-20-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 76 MHz
MODEL FREQUENCY: _____ 380 MHz



θ - 150°
 ϕ - _____

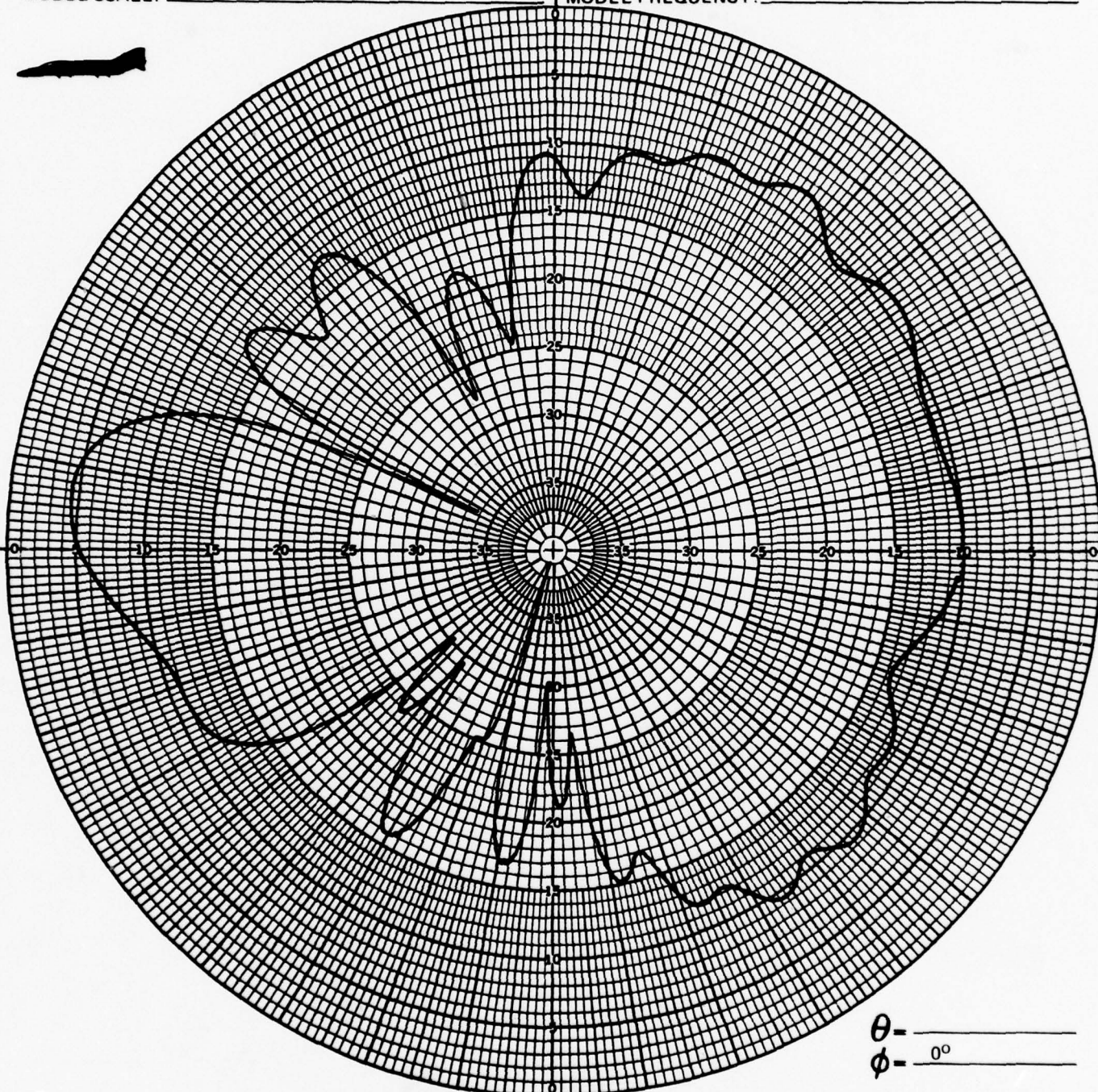
CONFIGURATION: _____ 29
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: E ϕ ☒ E θ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: _____ 4-20-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 104 MHz
MODEL FREQUENCY: 520 MHz



θ - _____
 ϕ - 0°

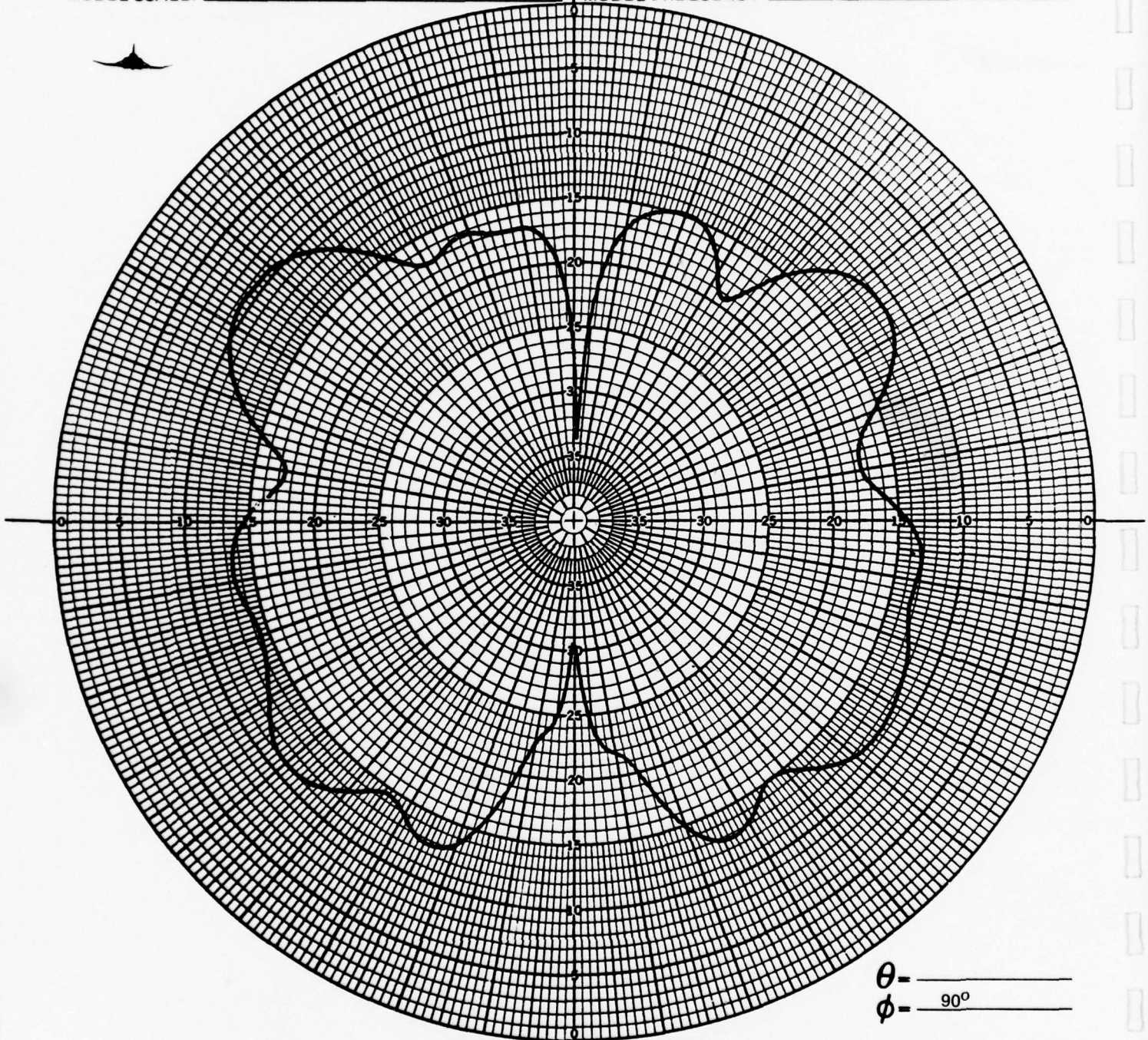
CONFIGURATION: 29
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: 285 FT
OBSERVER: PN, BM DATE: 4-18-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 104 MHz
MODEL FREQUENCY: 520 MHz



θ - _____
 ϕ - 90°

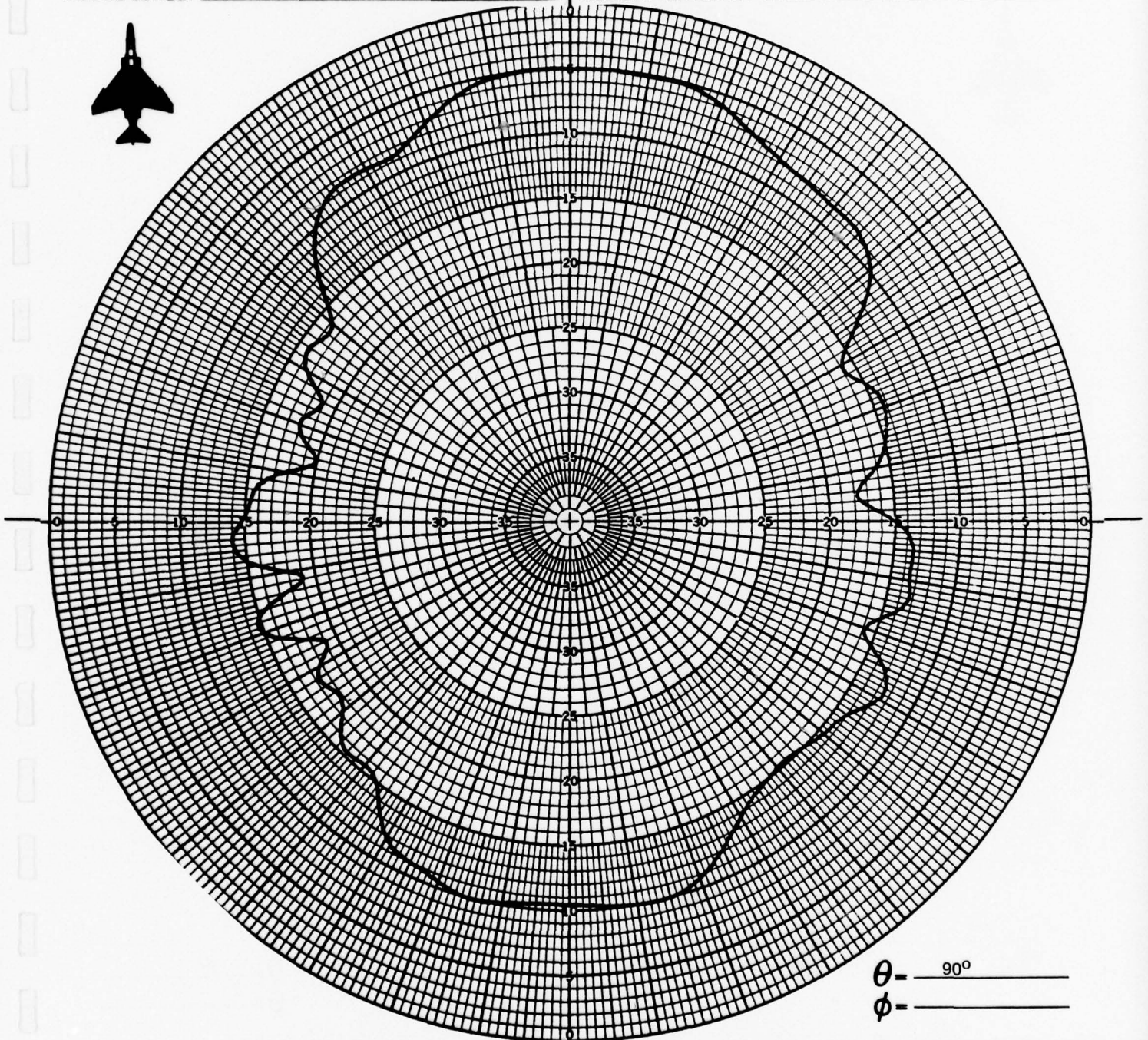
CONFIGURATION: 29
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: ☒ $E\phi$ ☐ $E\theta$ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: 285 FT
OBSERVER: PN, BM DATE: 4-18-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 104 MHz
MODEL FREQUENCY: 520 MHz



θ - 90°
 ϕ - _____

CONFIGURATION: 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 4-18-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE

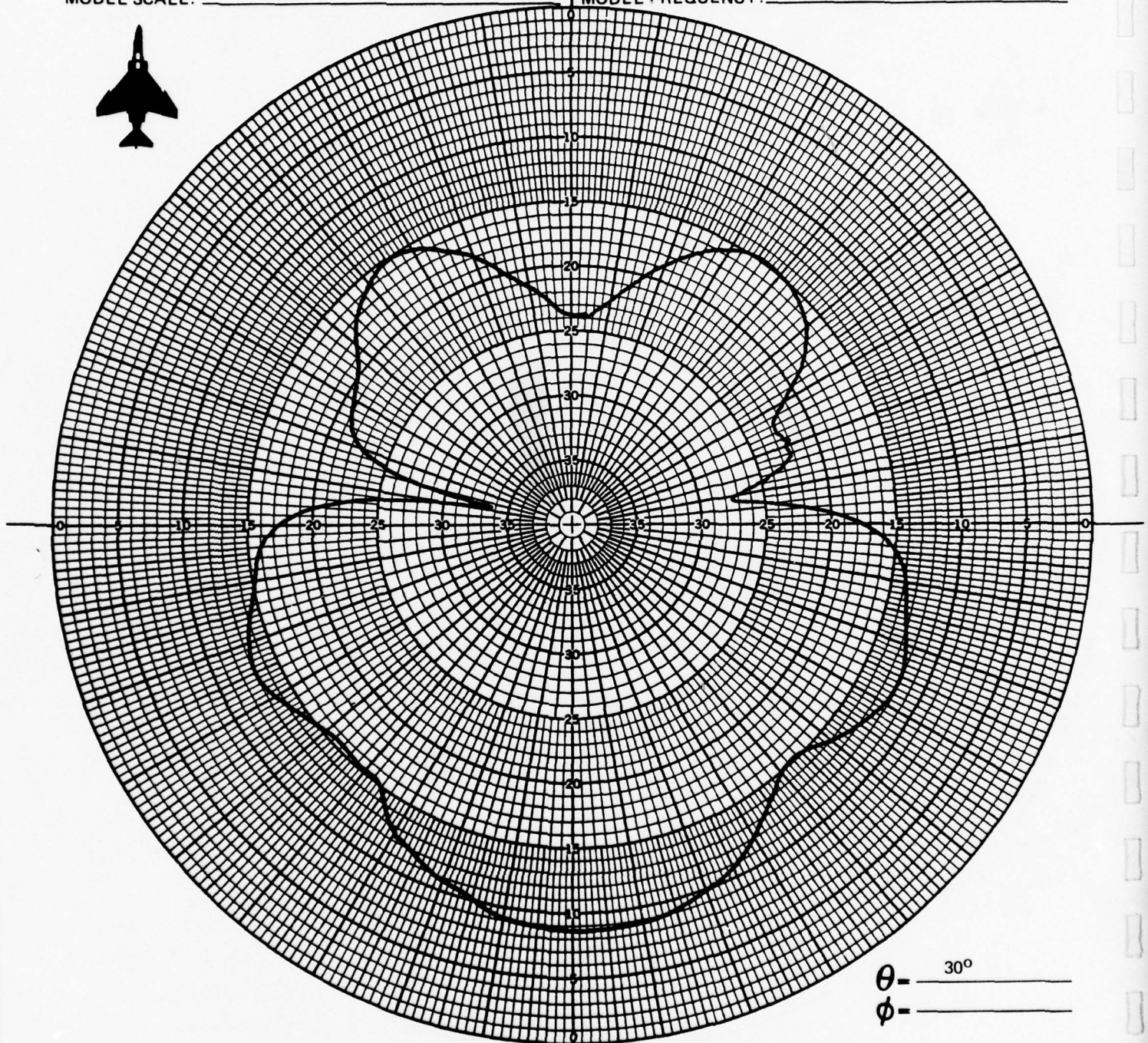
ANTENNA LOCATION: _____ FINCAP

MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)

FULL SCALE FREQUENCY: _____ 104 MHz

MODEL FREQUENCY: _____ 520 MHz



θ - 30°
 ϕ - _____

CONFIGURATION: _____ 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

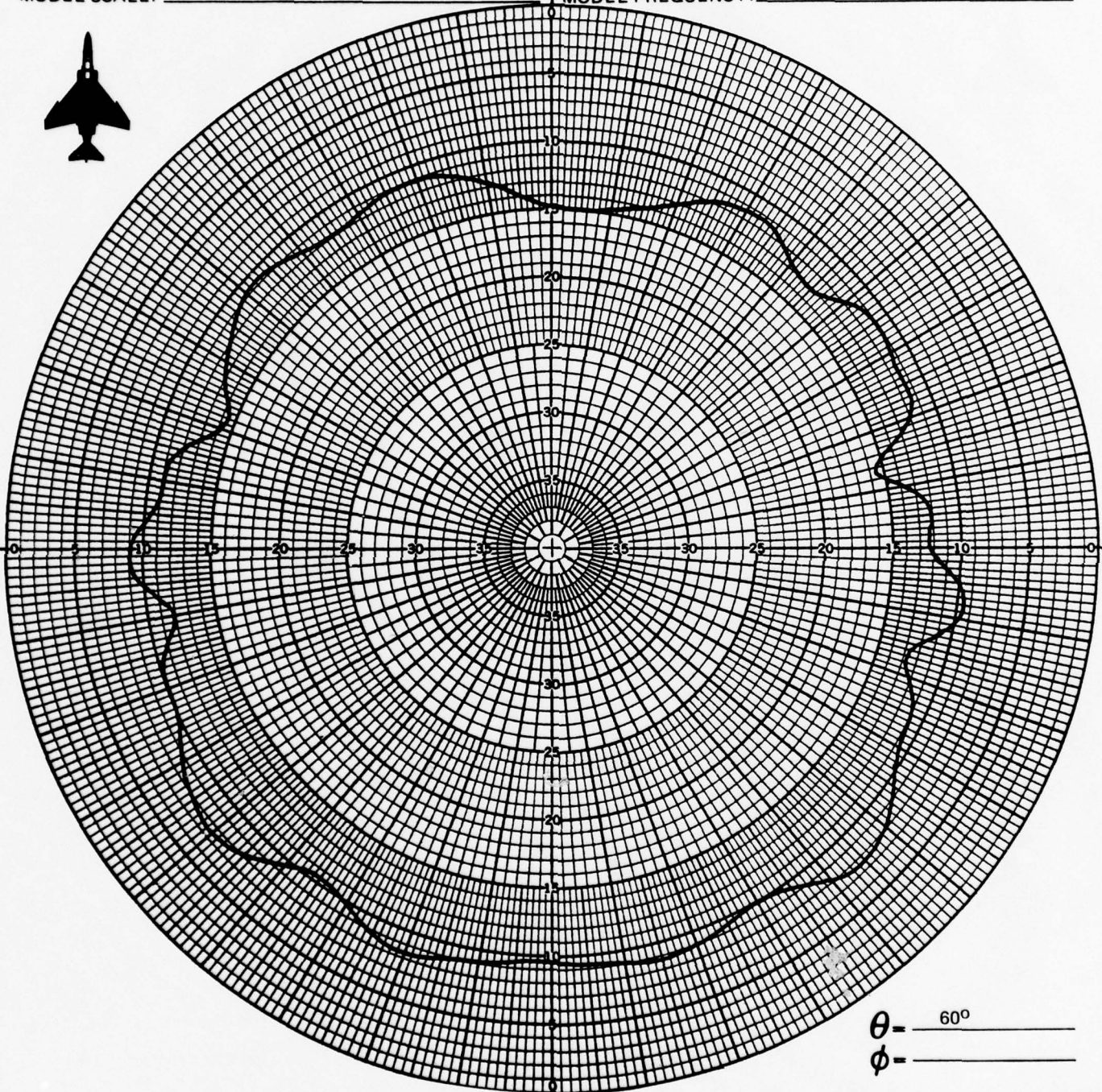
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: 4-18-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 104 MHz
MODEL FREQUENCY: 520 MHz



θ - 60°
 ϕ - _____

CONFIGURATION: 29
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: 285 FT
OBSERVER: PN, BM DATE: 4-18-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE

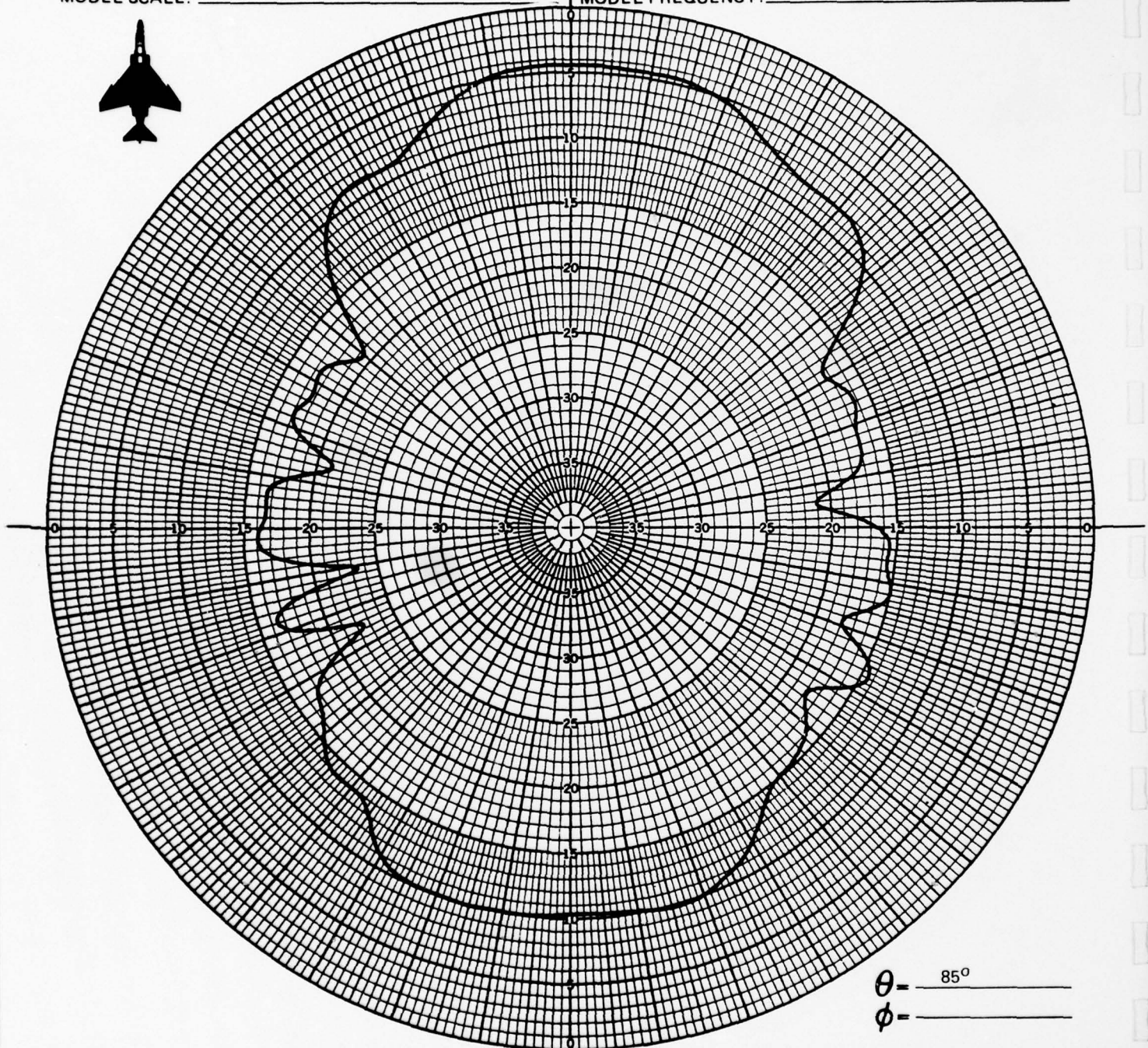
TEST IDENT.: _____ 703-174 (F-4)

ANTENNA LOCATION: _____ FINCAP

FULL SCALE FREQUENCY: _____ 104 MHz

MODEL SCALE: _____ 1/5

MODEL FREQUENCY: _____ 520 MHz



θ = _____ 85°
 ϕ = _____

CONFIGURATION: _____ 29

INTEGRATOR COUNT: _____

REMARKS: _____

POLARIZATION: E ϕ ☐ E θ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

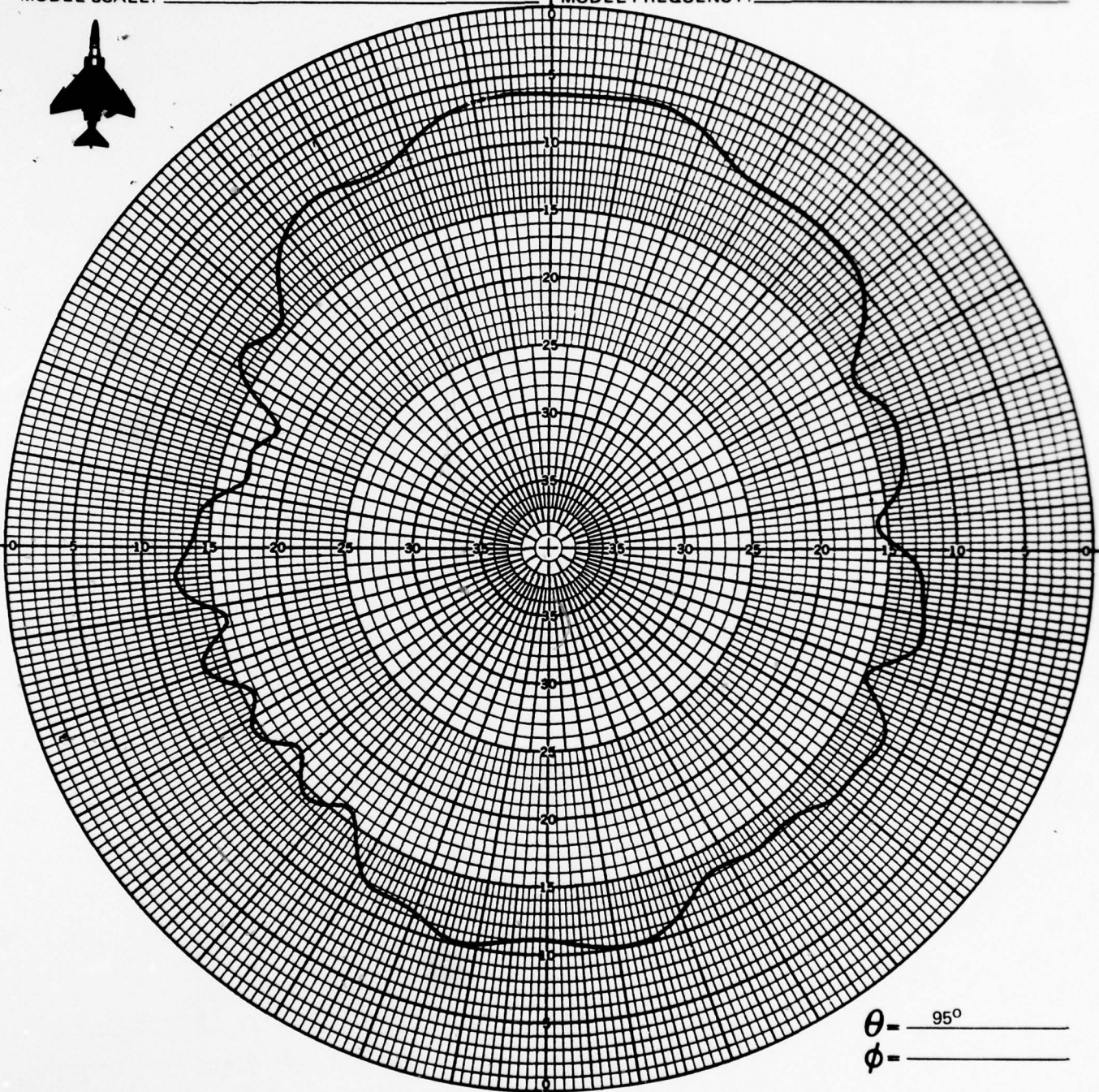
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM _____ DATE: 4-18-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 104 MHz
MODEL FREQUENCY: _____ 520 MHz

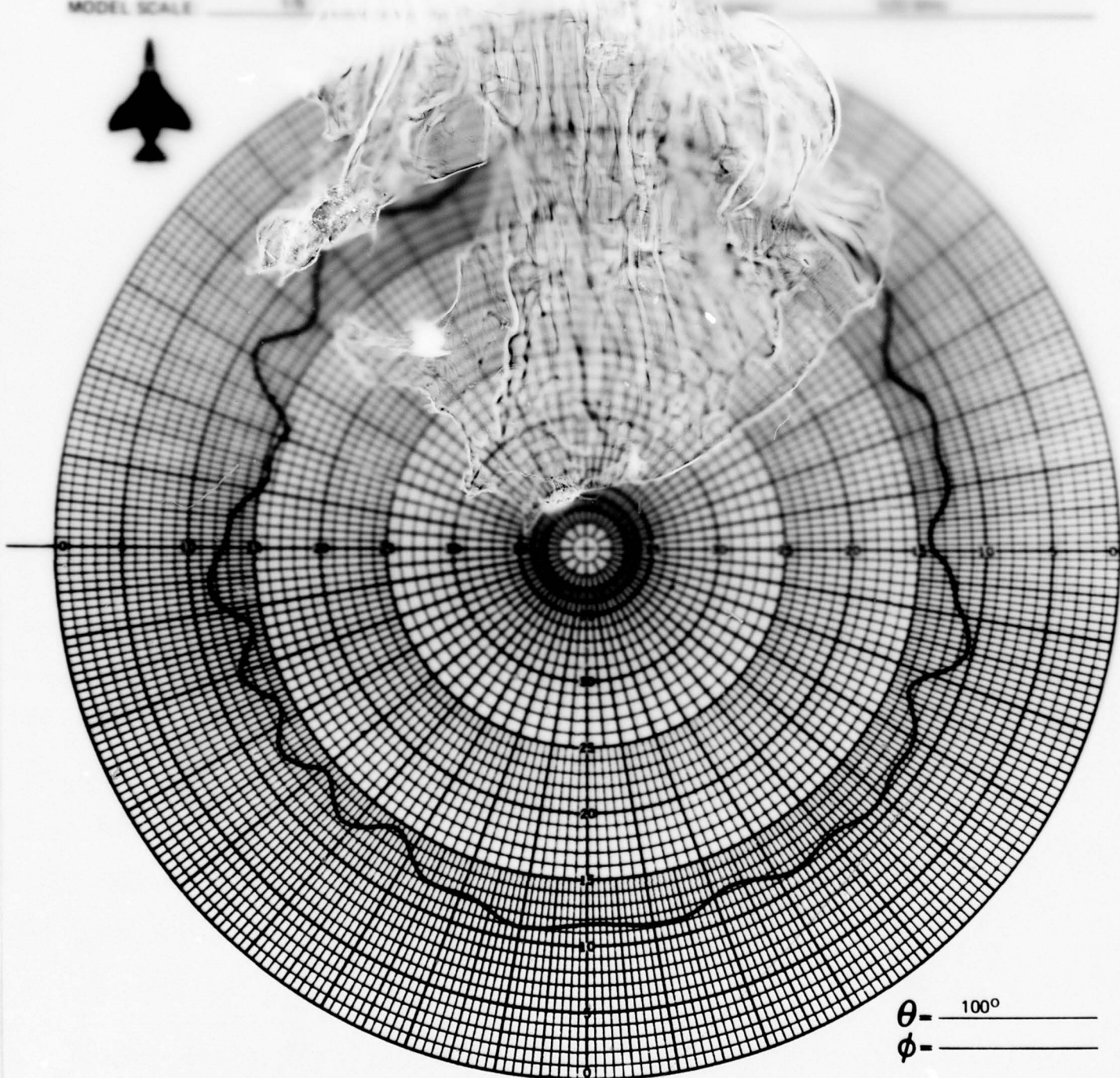


θ - _____ 95°
 ϕ - _____

CONFIGURATION: _____ 29
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: _____ 4-18-77

ANTENNA _____
ANTENNA LOCATION _____
MODEL SCALE _____



θ - 100°
 ϕ -

CONFIGURATION: 29

REMARKS:

INTEGRATOR COUNT:

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER:

PLOTTED IN: RELATIVE dB

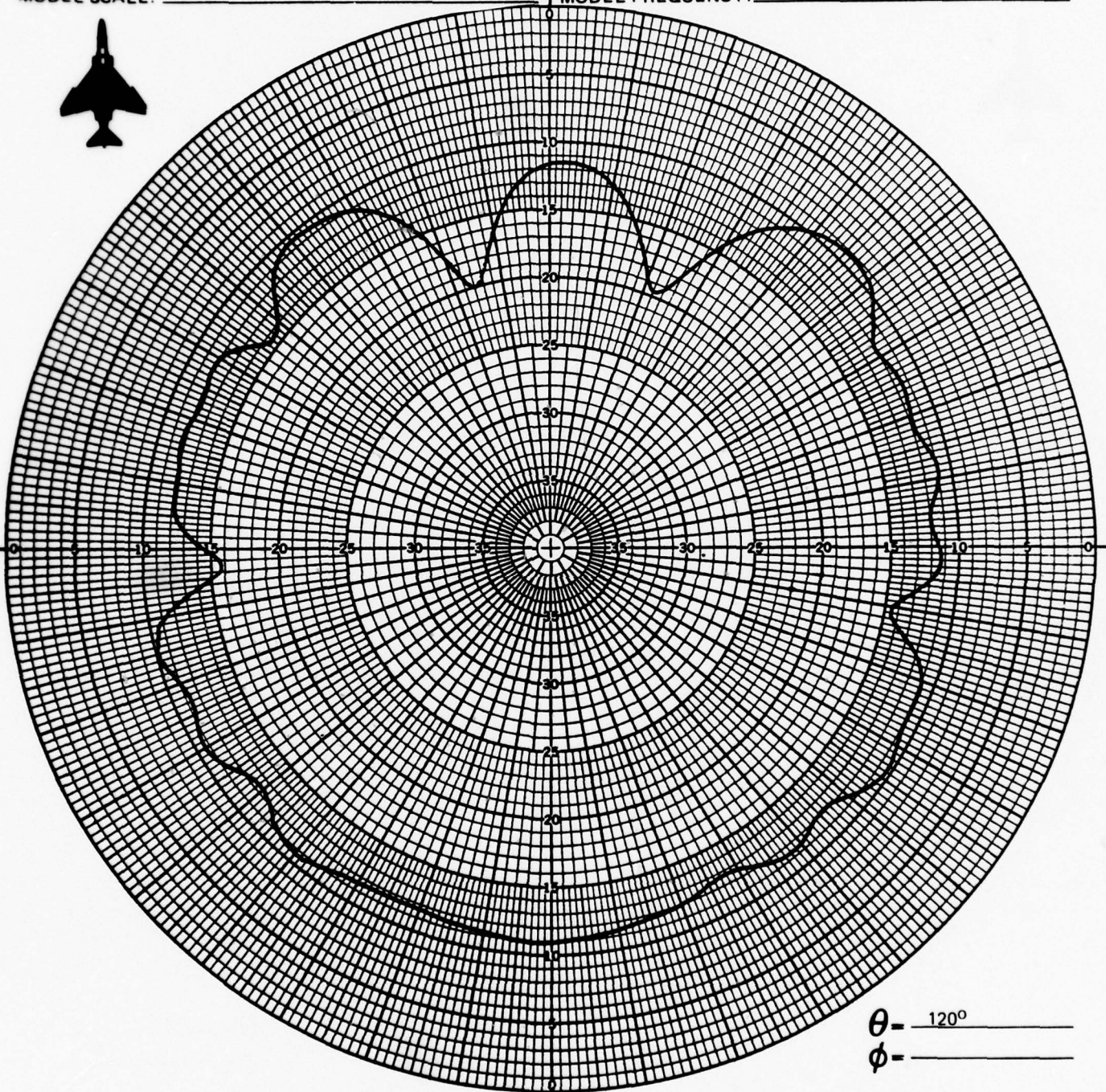
TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 4-18-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 104 MHz
MODEL FREQUENCY: 520 MHz



θ - 120°
 ϕ - _____

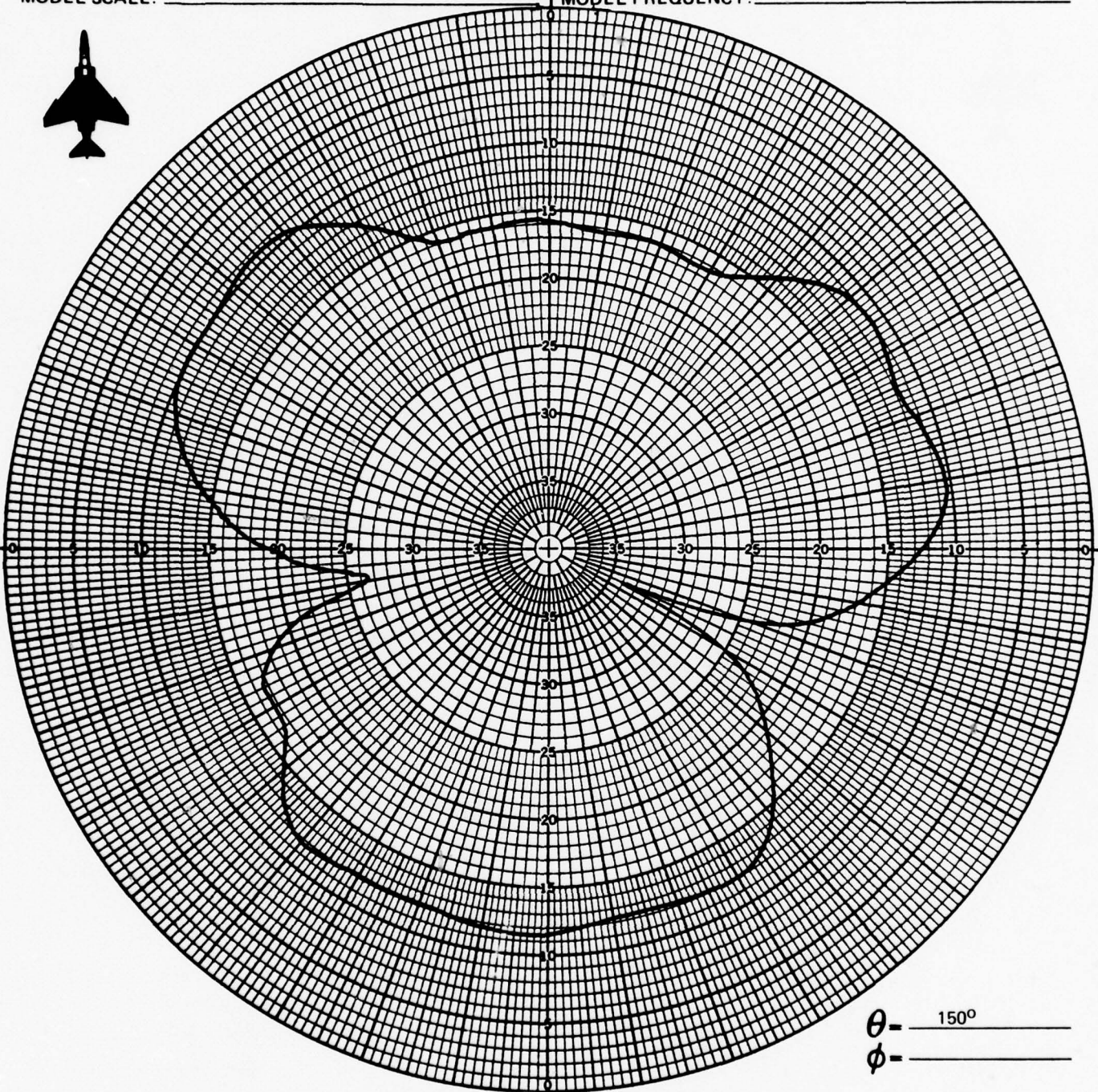
CONFIGURATION: 29
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E \phi$ ☐ $E \theta$ ☒ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: 285 FT
OBSERVER: PN, BM DATE: 4-18-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 104 MHz
MODEL FREQUENCY: 520 MHz



θ - 150°
 ϕ - _____

CONFIGURATION: 29
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: 285 FT
OBSERVER: PN, BM DATE: 4-18-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE

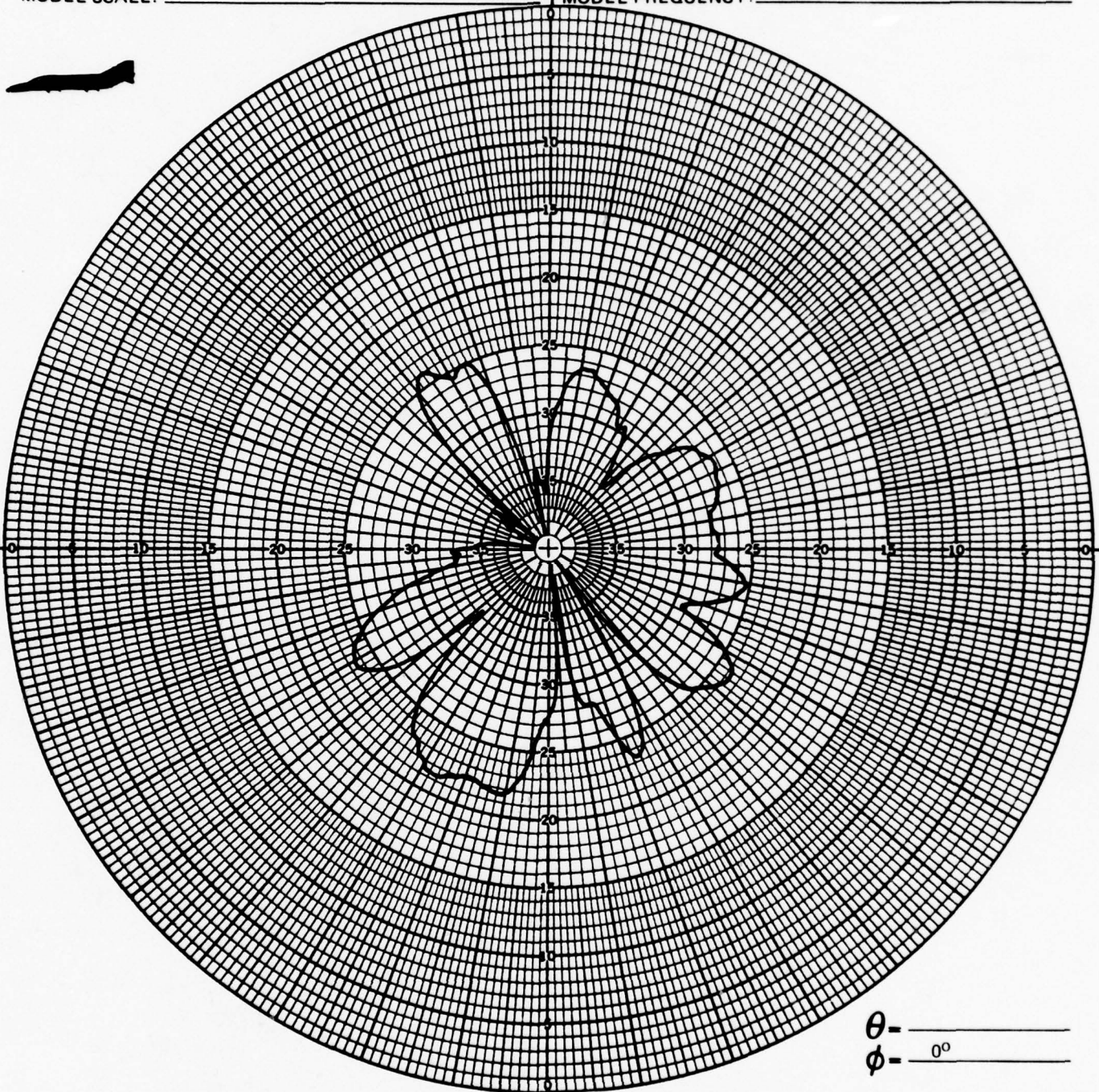
TEST IDENT.: 703-174 (F-4)

ANTENNA LOCATION: FINCAP

FULL SCALE FREQUENCY: 104 MHz

MODEL SCALE: 1/5

MODEL FREQUENCY: 520 MHz



CONFIGURATION: 29

INTEGRATOR COUNT: _____

REMARKS: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 4-18-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE

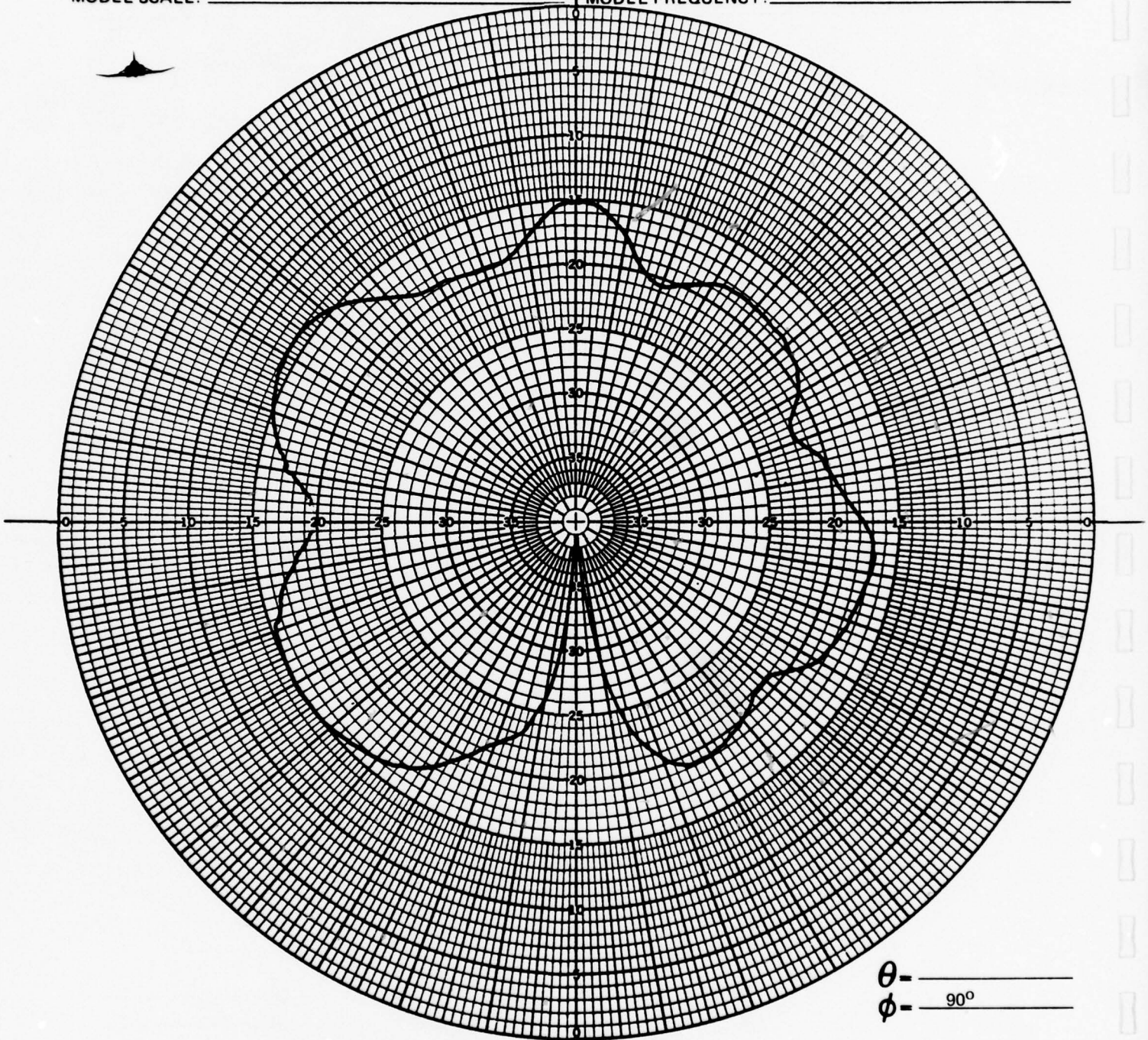
ANTENNA LOCATION: _____ FINCAP

MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)

FULL SCALE FREQUENCY: _____ 104 MHz

MODEL FREQUENCY: _____ 520 MHz



θ - _____
 ϕ - 90°

CONFIGURATION: _____ 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: E ϕ ☒ E θ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

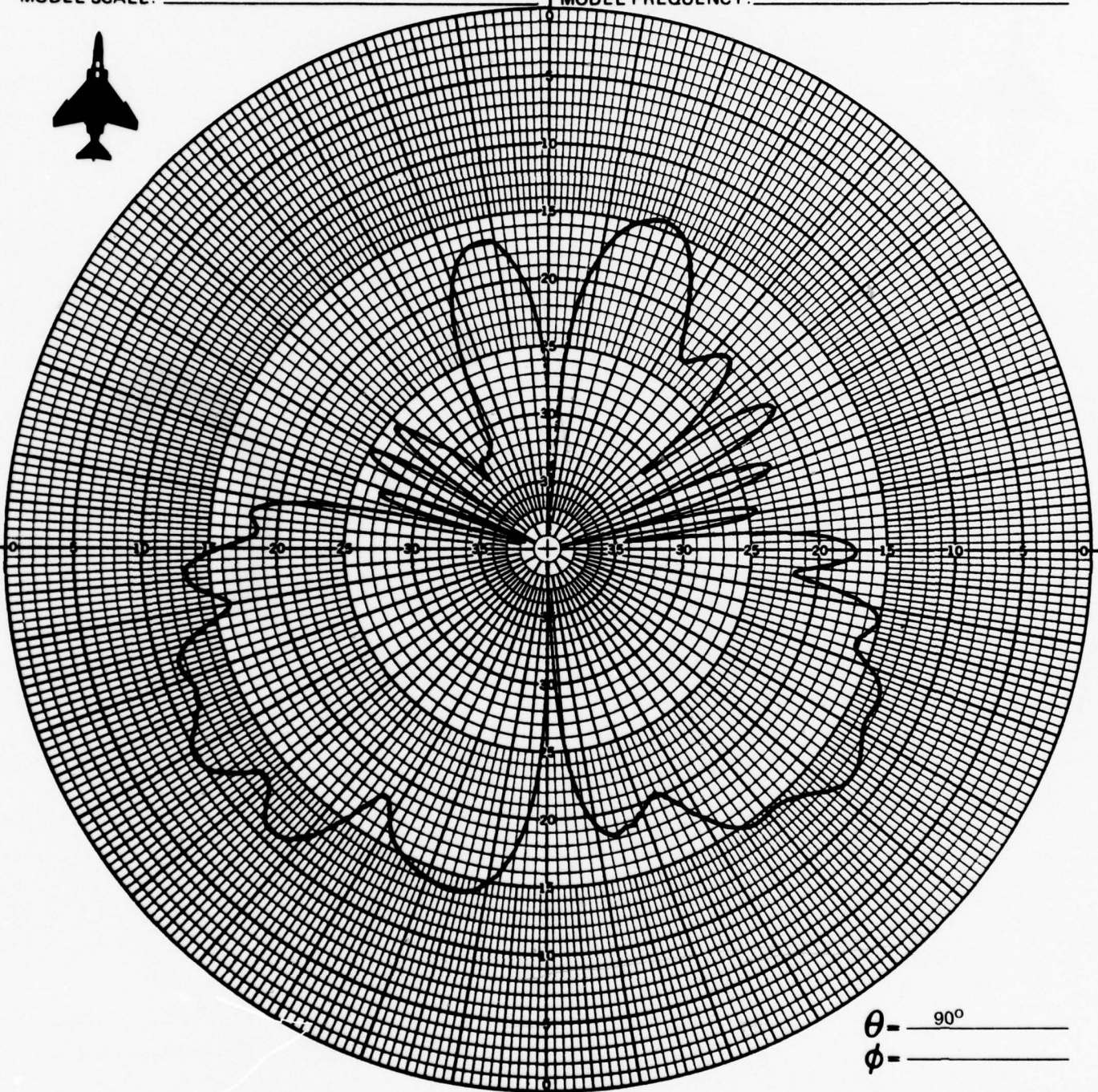
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: 4-18-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 104 MHz
MODEL FREQUENCY: 520 MHz



θ - 90°
 ϕ - _____

CONFIGURATION: 29

REMARKS _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 4-18-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE

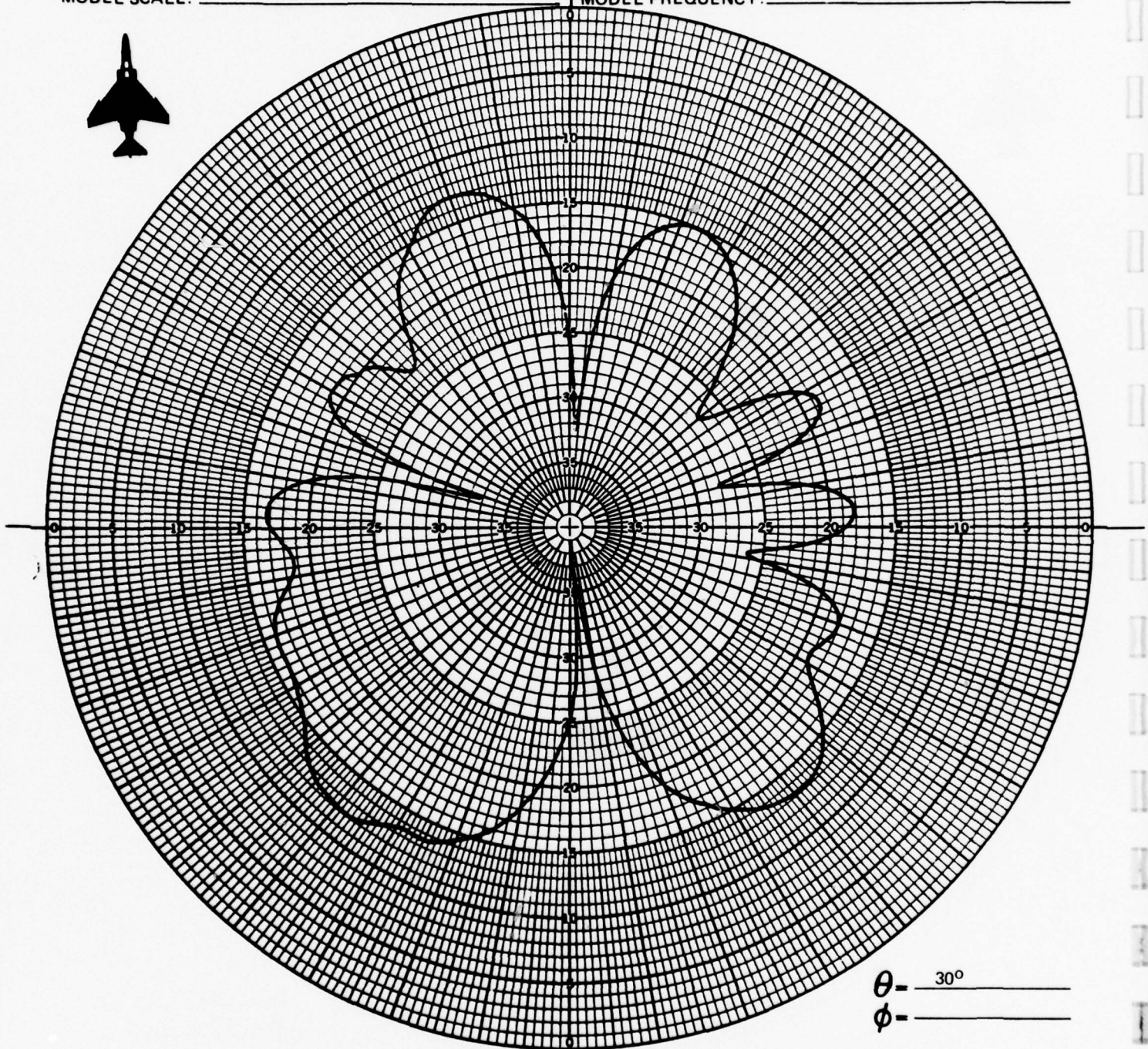
TEST IDENT.: 703-174 (F-4)

ANTENNA LOCATION: FINCAP

FULL SCALE FREQUENCY: 104 MHz

MODEL SCALE: 1/5

MODEL FREQUENCY: 520 MHz



θ - 30°
 ϕ - _____

CONFIGURATION: 29

INTEGRATOR COUNT: _____

REMARKS: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

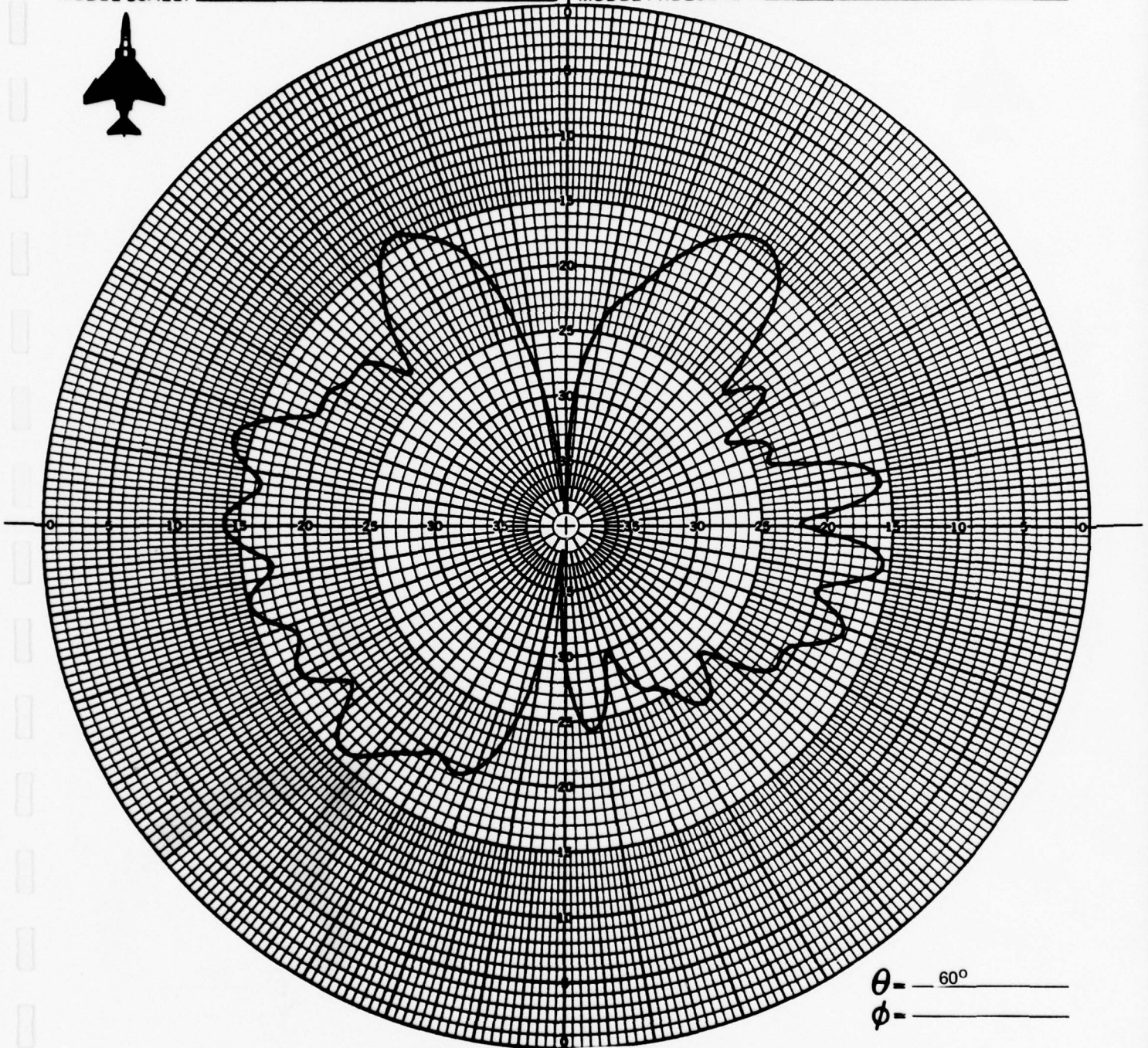
TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 4-18-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 104 MHz
MODEL FREQUENCY: _____ 520 MHz



θ - 60°
 ϕ -

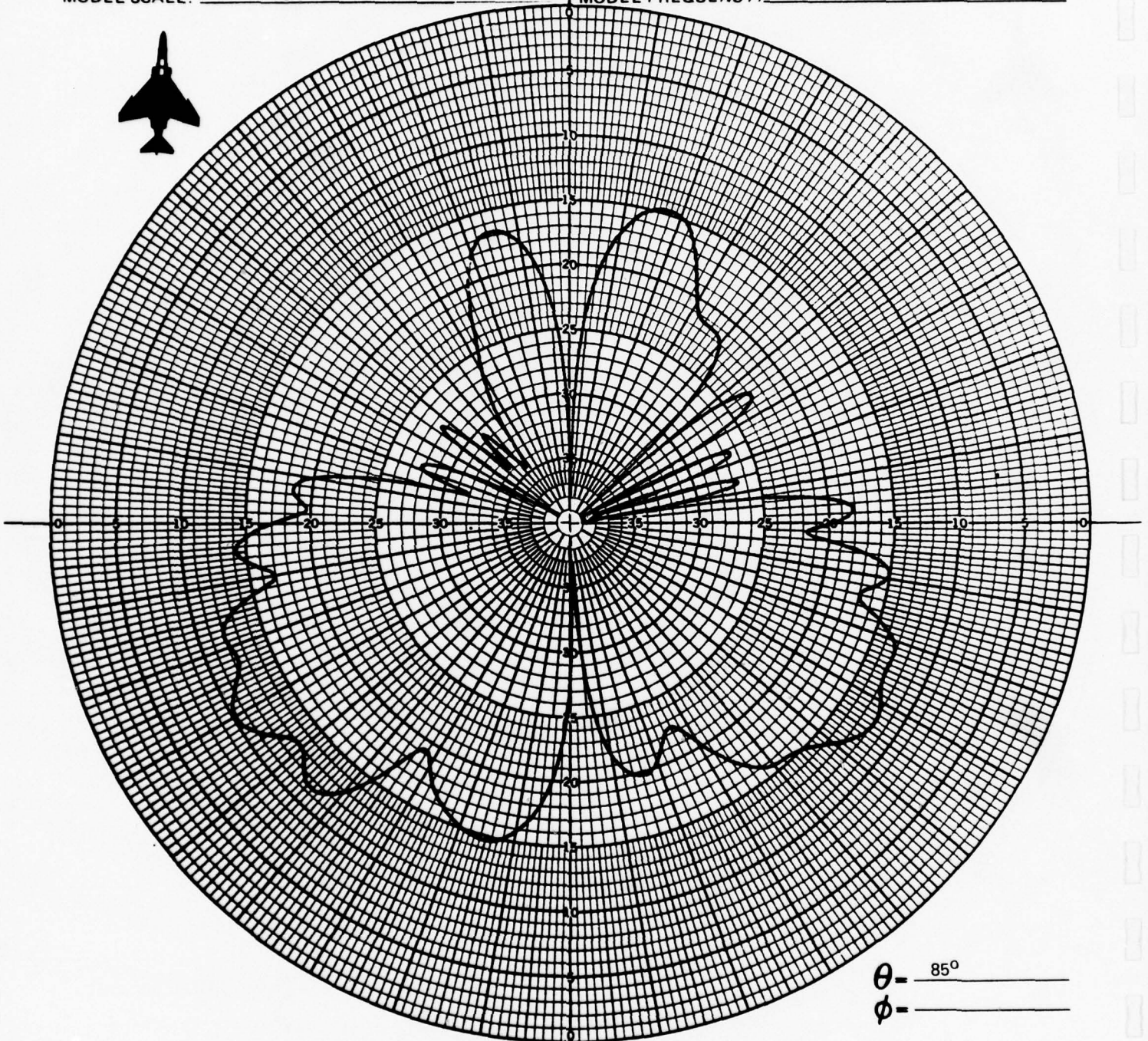
CONFIGURATION: _____ 29
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: ☒ $E\phi$ ☐ $E\theta$ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: _____ 4-18-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 104 MHz
MODEL FREQUENCY: _____ 520 MHz



θ - 85°
 ϕ - _____

CONFIGURATION: _____ 29

INTEGRATOR COUNT: _____

REMARKS: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

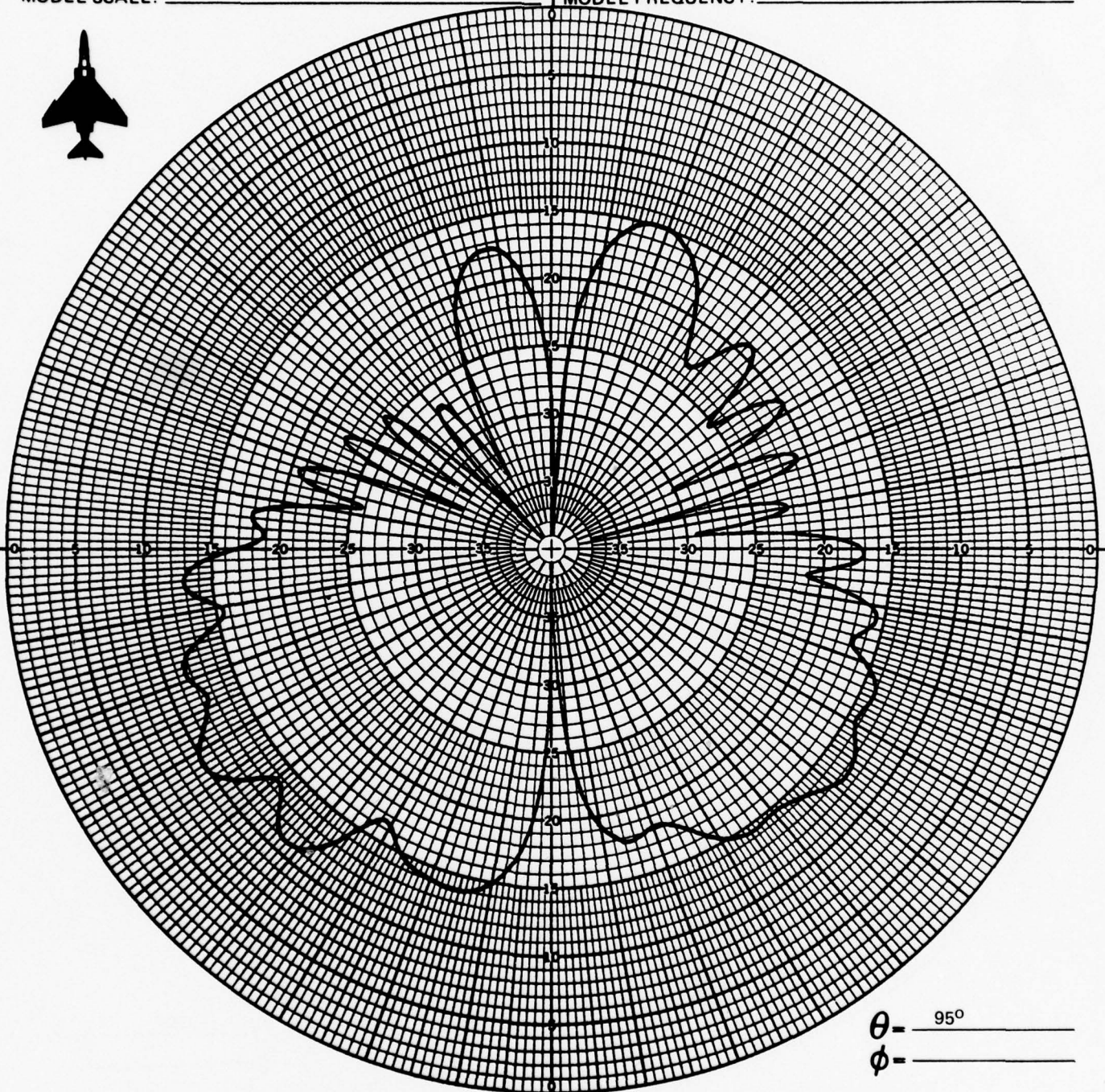
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: 4-18-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 104 MHz
MODEL FREQUENCY: _____ 520 MHz



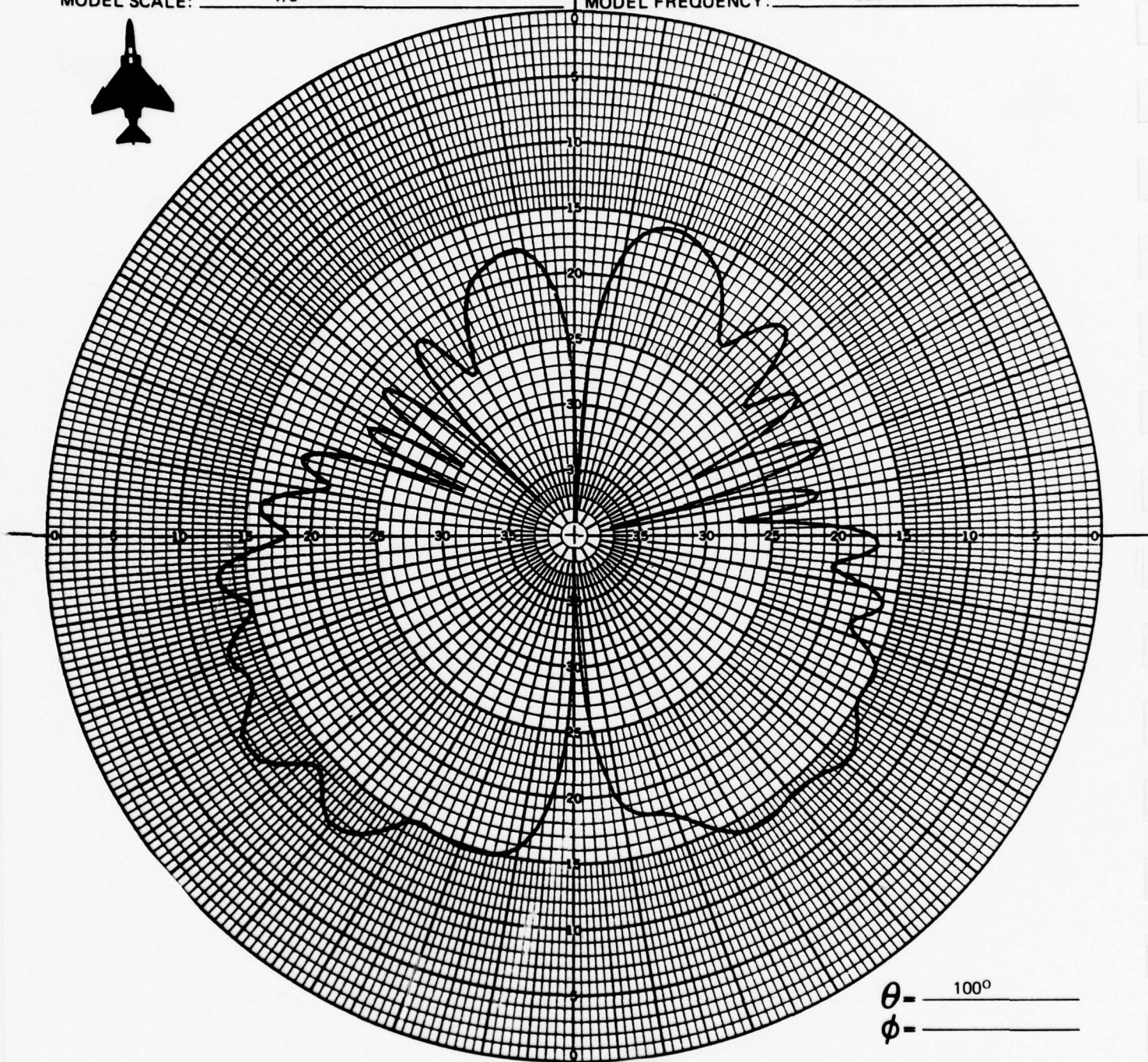
θ = 95°
 ϕ = _____

CONFIGURATION: _____ 29
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: E ☒ ϕ ☐ E θ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: 4-18-77

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

DOCUMENT _____
REVISION _____
TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 104 MHz
MODEL FREQUENCY: 520 MHz



θ - 100°
 ϕ - _____

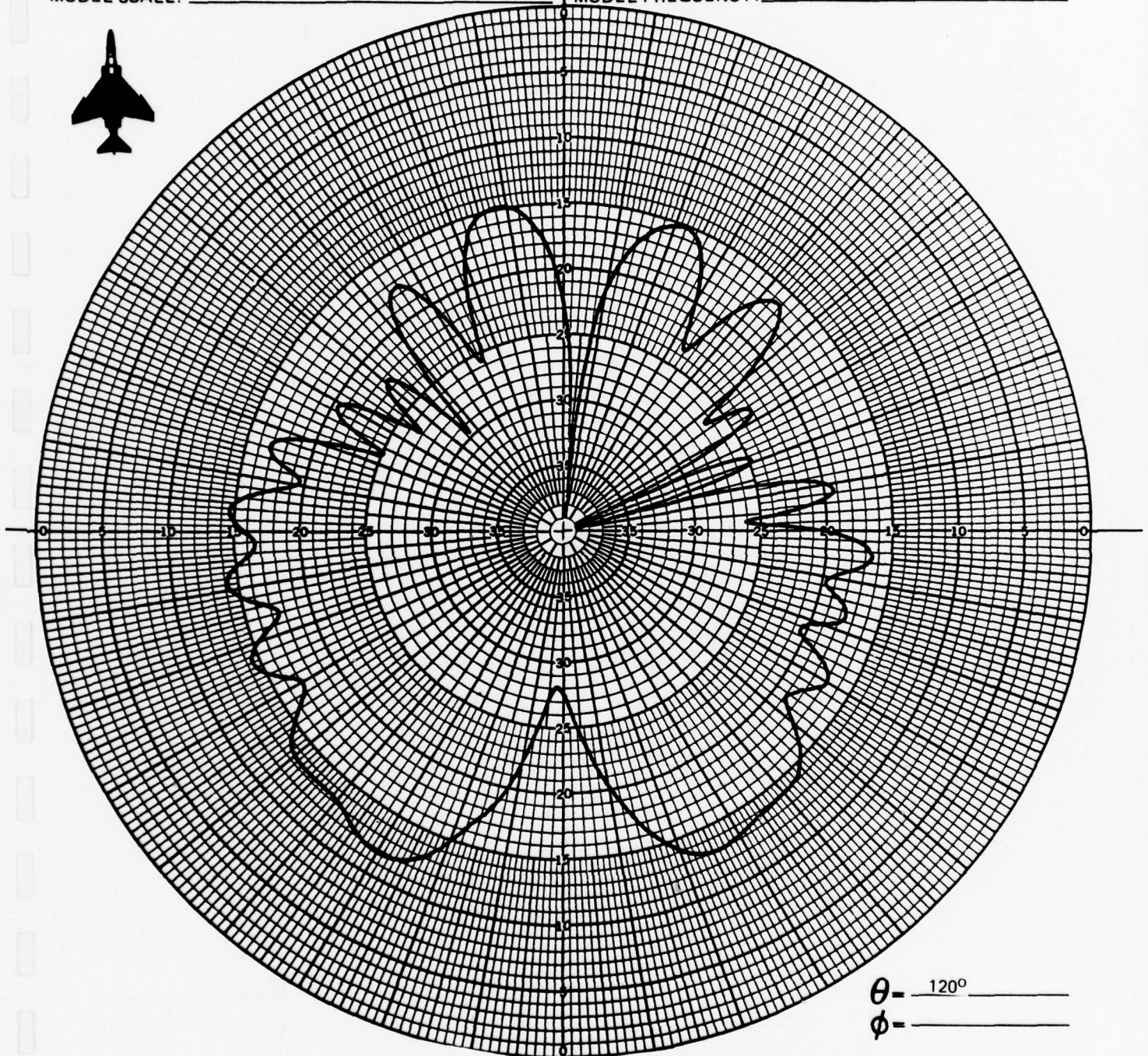
CONFIGURATION: 29
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: ☒ $E\phi$ ☐ $E\theta$ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: 285 FT
OBSERVER: PN, BM DATE: 4-18-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 104 MHz
MODEL FREQUENCY: _____ 520 MHz



θ = 120°
 ϕ = _____

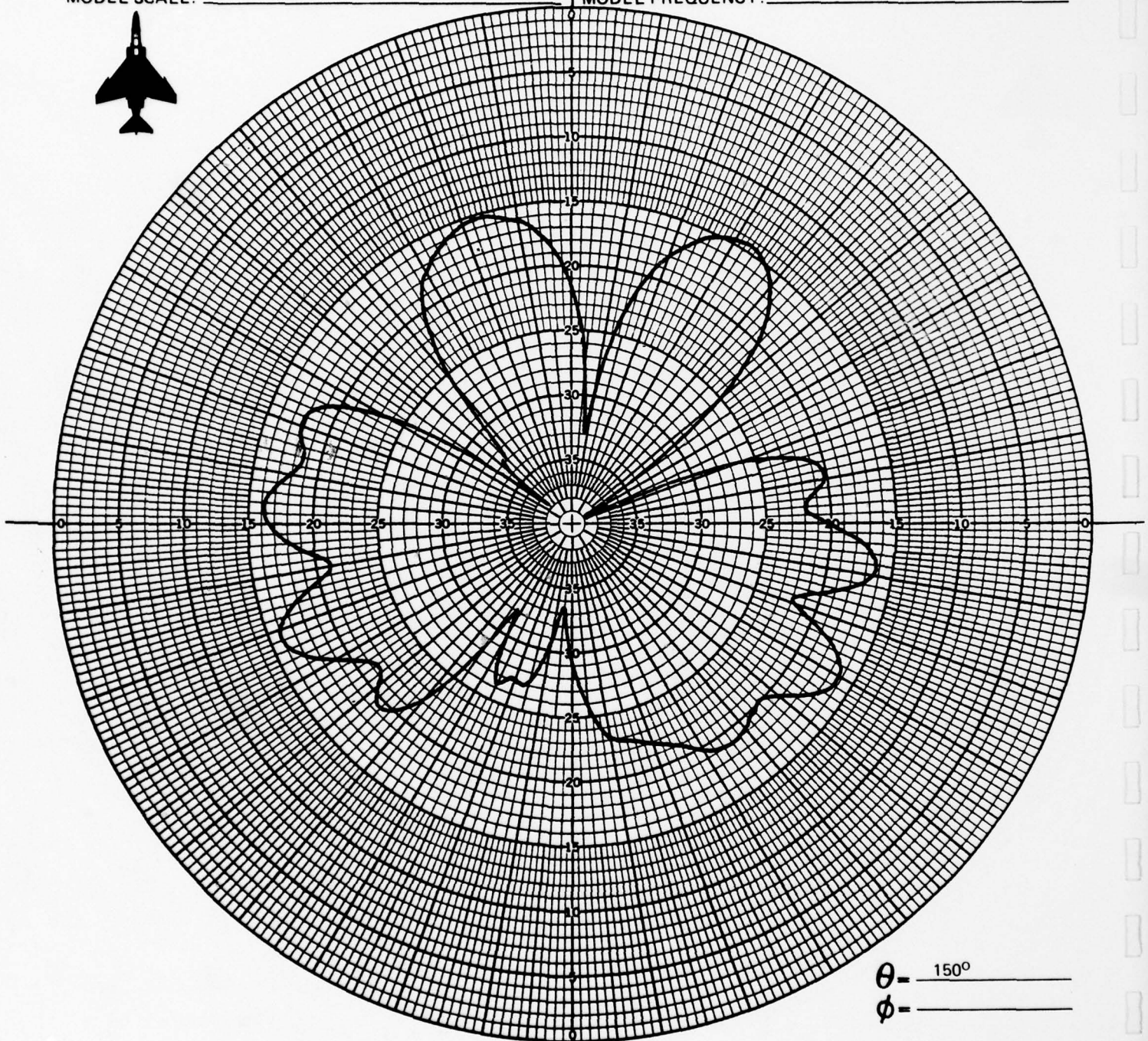
CONFIGURATION: _____ 29
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: 4-18-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 104 MHz
MODEL FREQUENCY: _____ 520 MHz



θ - 150°
 ϕ - _____

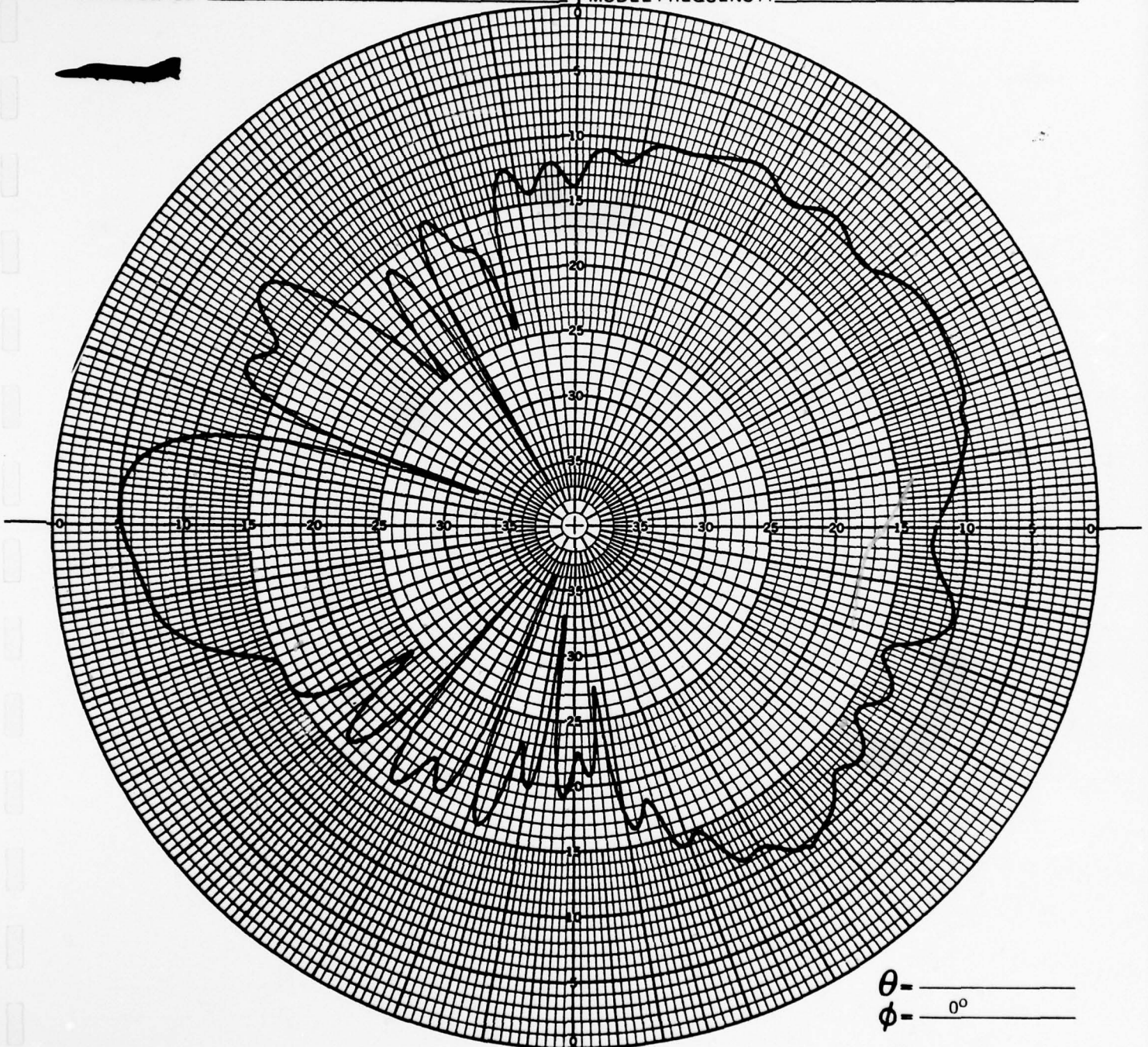
CONFIGURATION: _____ 29
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: E ϕ ☒ E θ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: 4-18-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 145 MHz
MODEL FREQUENCY: _____ 725 MHz



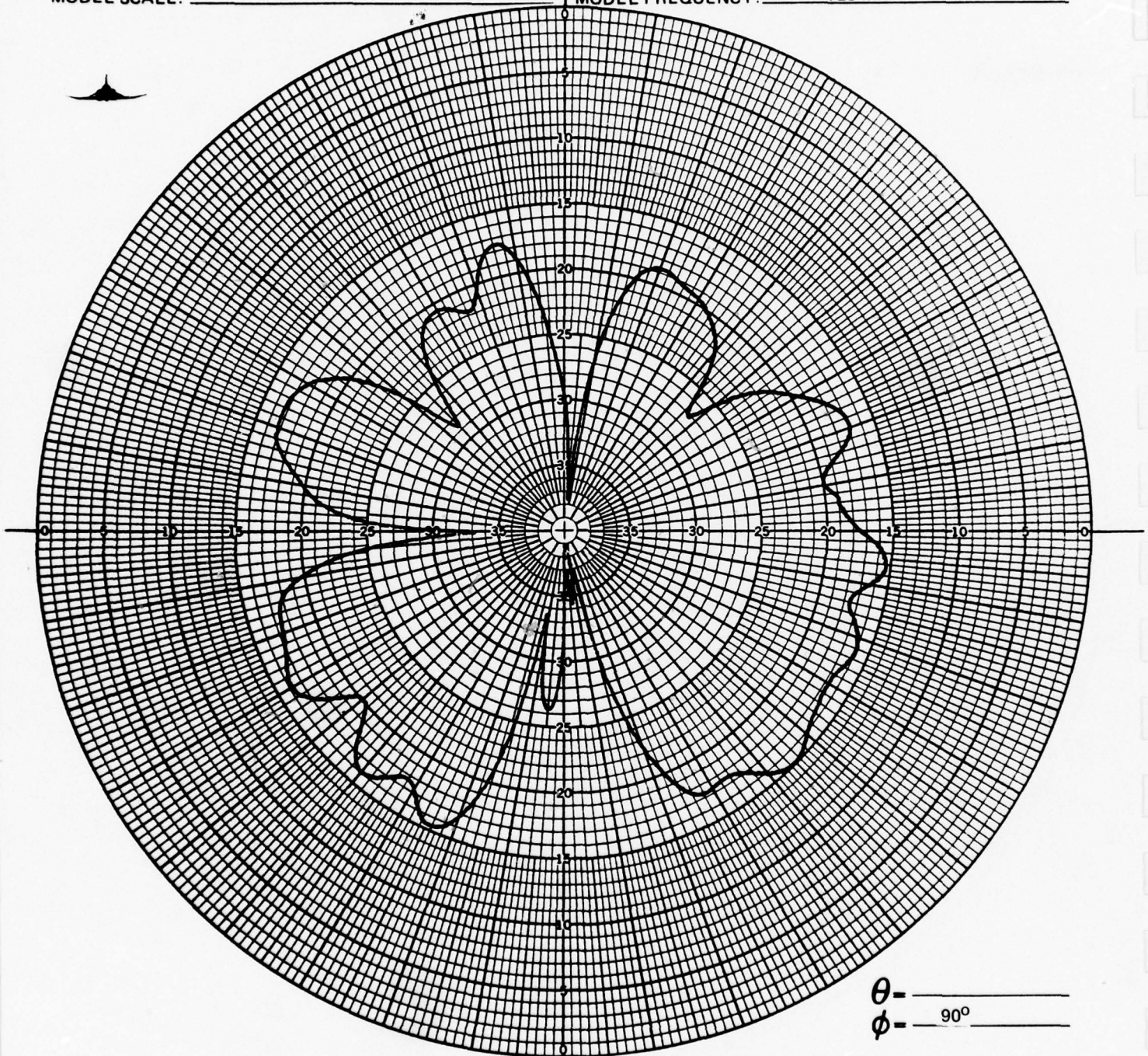
CONFIGURATION: _____ 29
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: ☒ $E\phi$ ☐ $E\theta$ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: 4-18-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 145 MHz
MODEL FREQUENCY: _____ 725 MHz



CONFIGURATION: _____ 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

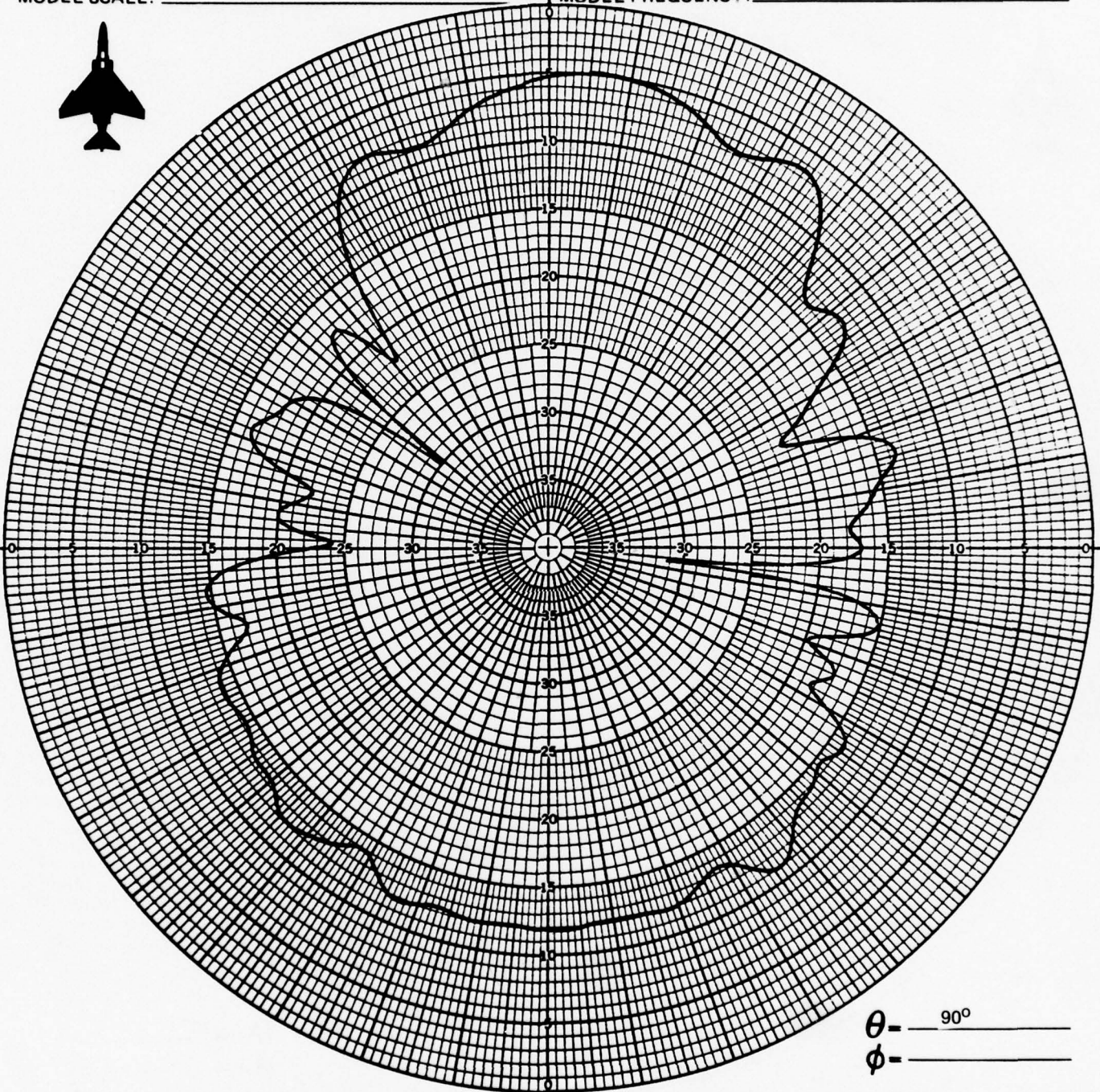
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 4-18-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 145 MHz
MODEL FREQUENCY: _____ 725 MHz



θ - 90°
 ϕ - _____

CONFIGURATION: _____ 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

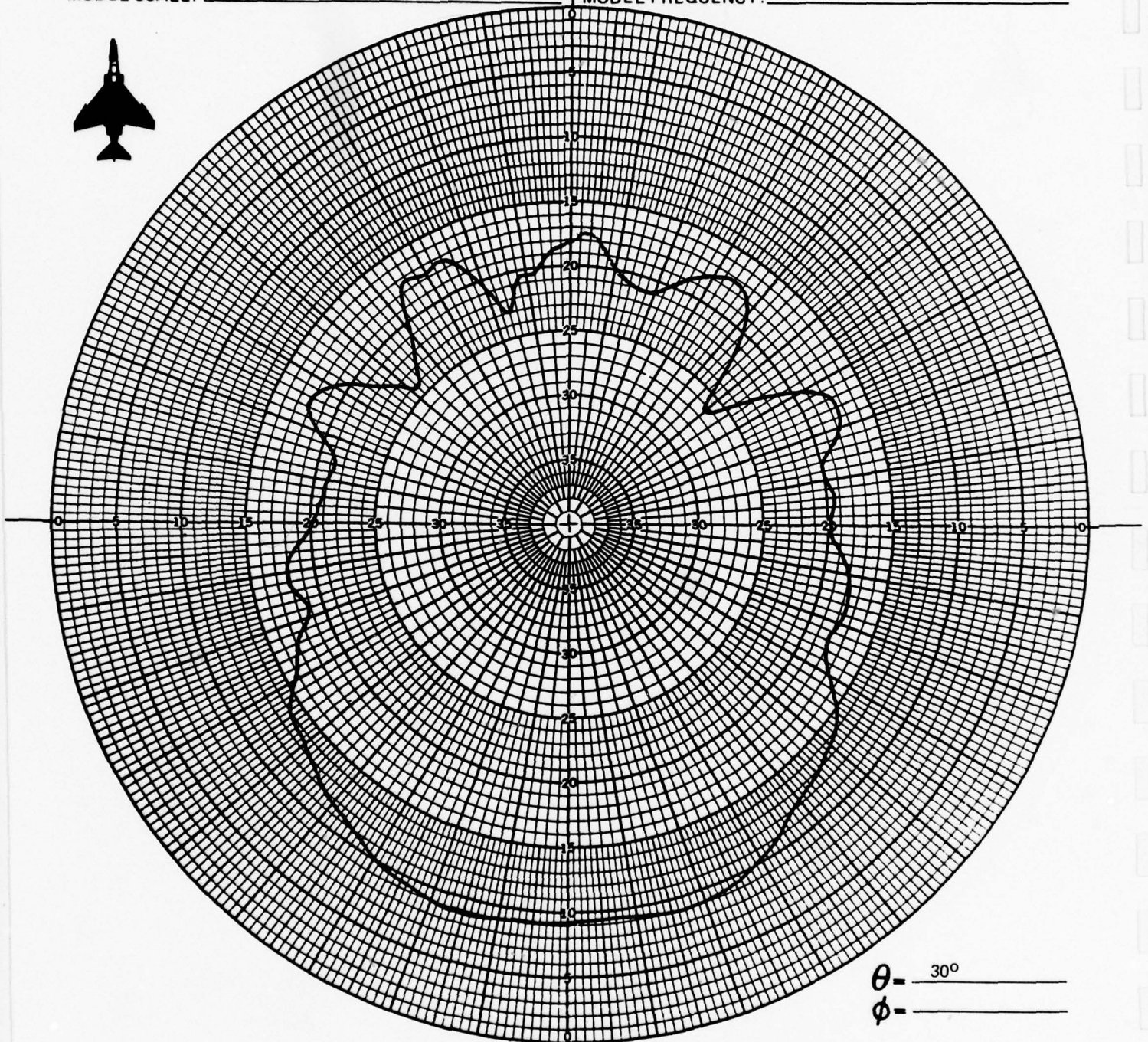
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 4-18-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 145 MHz
MODEL FREQUENCY: 725 MHz



θ - 30°
 ϕ - _____

CONFIGURATION: 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 4-18-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE

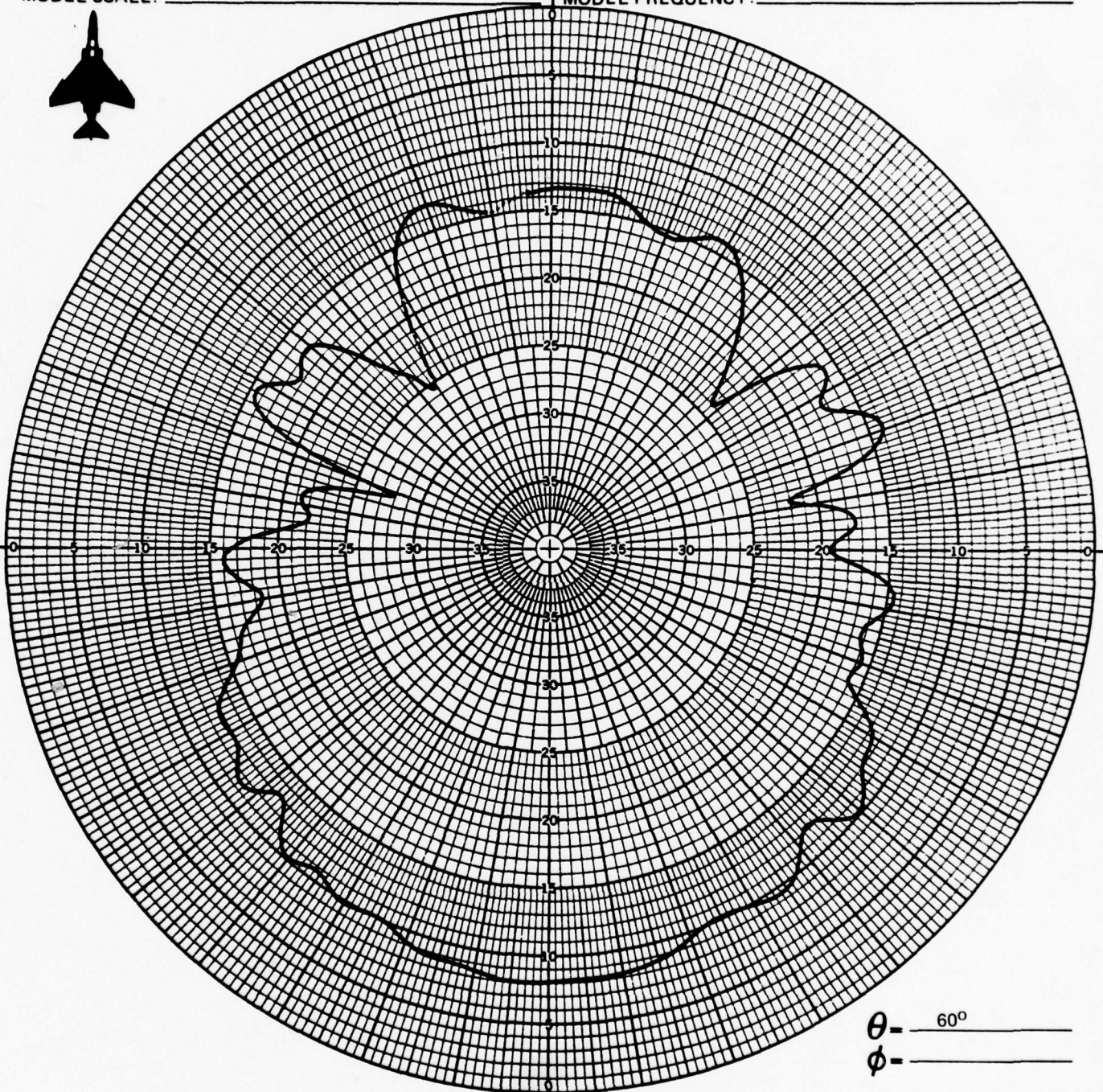
ANTENNA LOCATION: _____ FINCAP

MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)

FULL SCALE FREQUENCY: _____ 145 MHz

MODEL FREQUENCY: _____ 725 MHz



θ - 60°
 ϕ - _____

CONFIGURATION: _____ 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: E ϕ ☐ E θ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

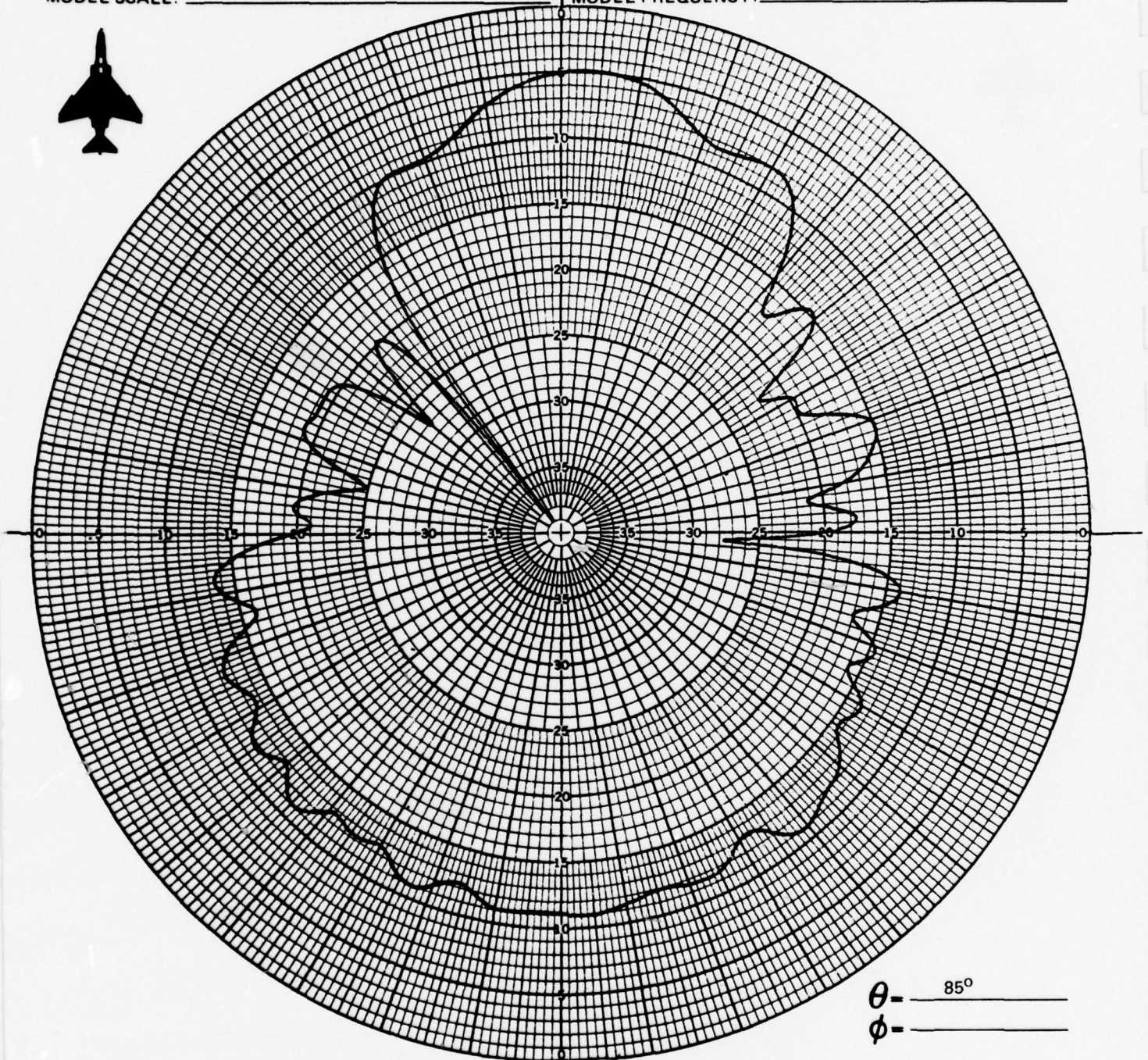
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: 4-18-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 145 MHz
MODEL FREQUENCY: 725 MHz



θ - 85°
 ϕ - _____

CONFIGURATION: 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

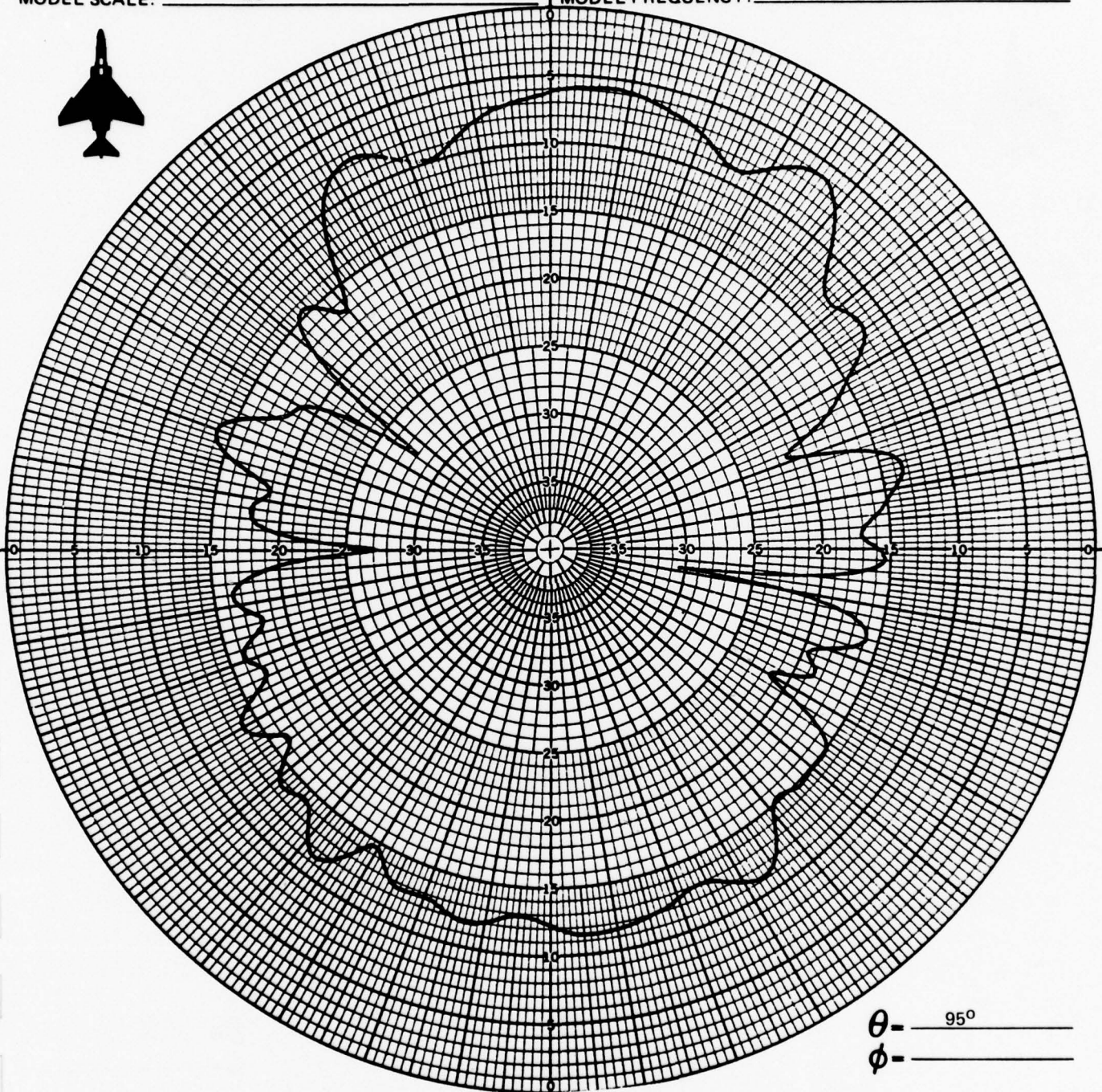
TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 4-18-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 145 MHz
MODEL FREQUENCY: 725 MHz



θ - 95°
 ϕ - _____

CONFIGURATION: 29

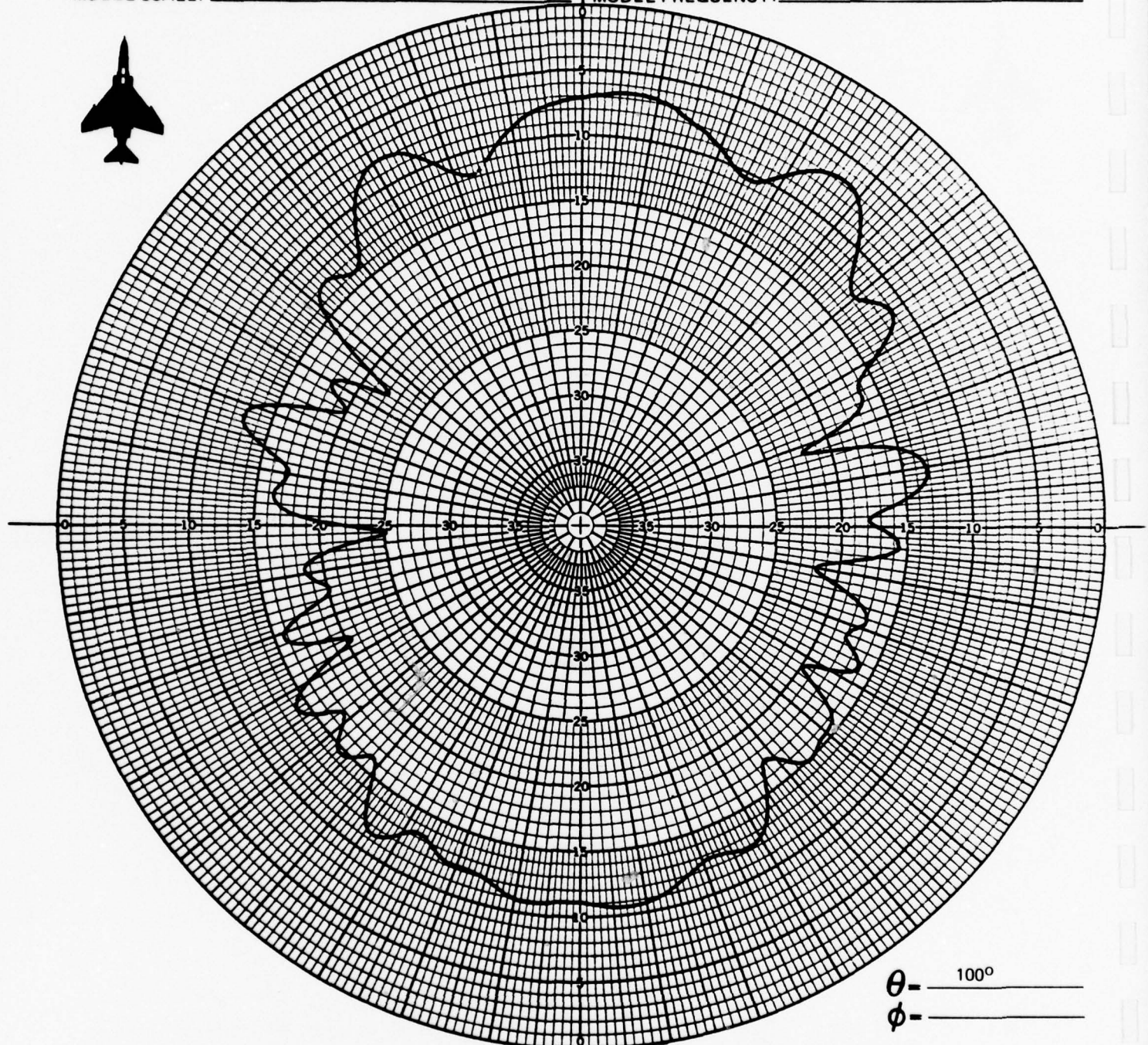
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: 285 FT
OBSERVER: PN, BM DATE: 4-18-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 145 MHz
MODEL FREQUENCY: 725 MHz



θ - 100°
 ϕ - _____

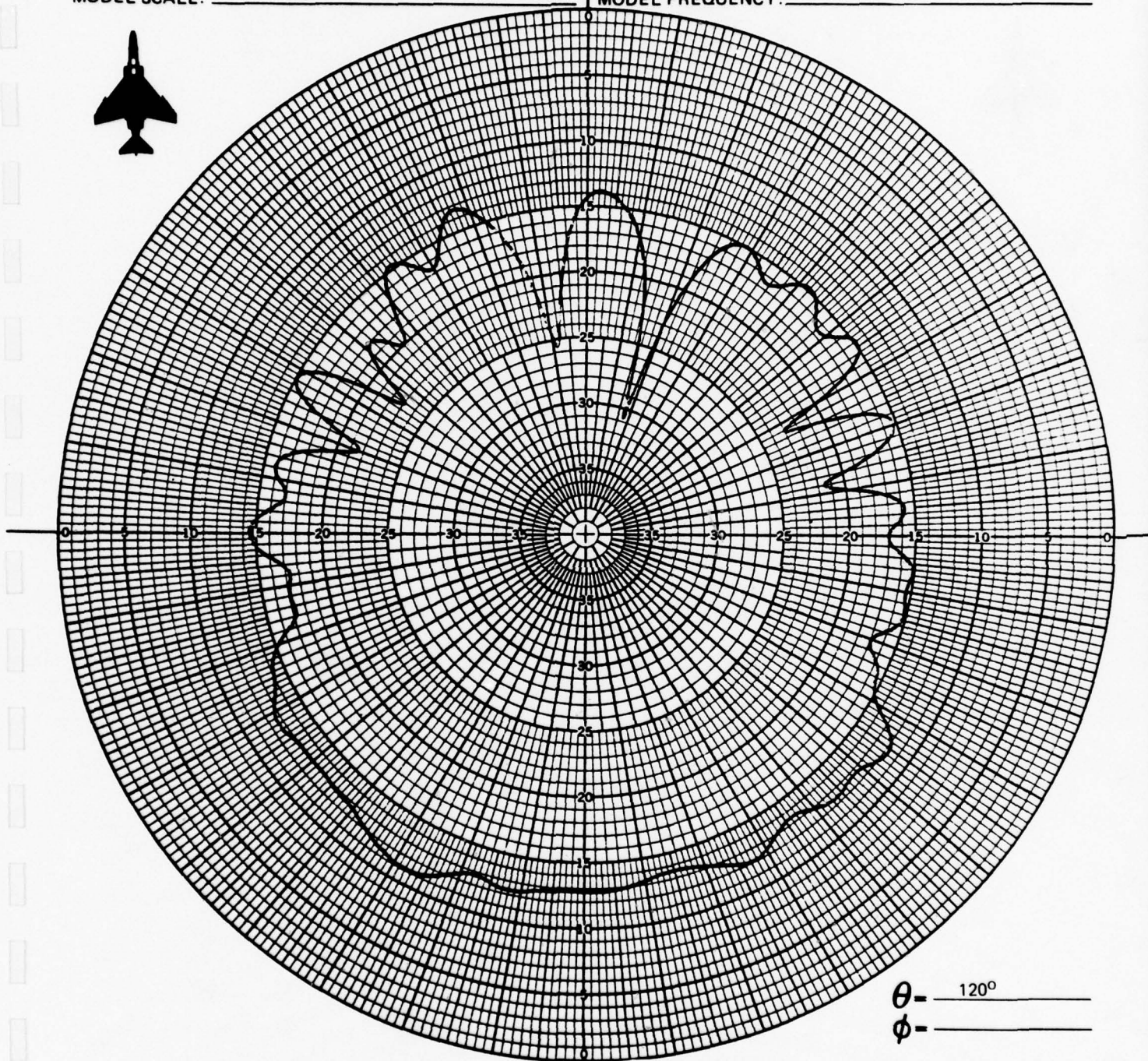
CONFIGURATION: 29
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: ☒ $E\phi$ ☐ $E\theta$ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: 285 FT
OBSERVER: PN, BM DATE: 4-18-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 145 MHz
MODEL FREQUENCY: 725 MHz



θ - 120°
 ϕ - _____

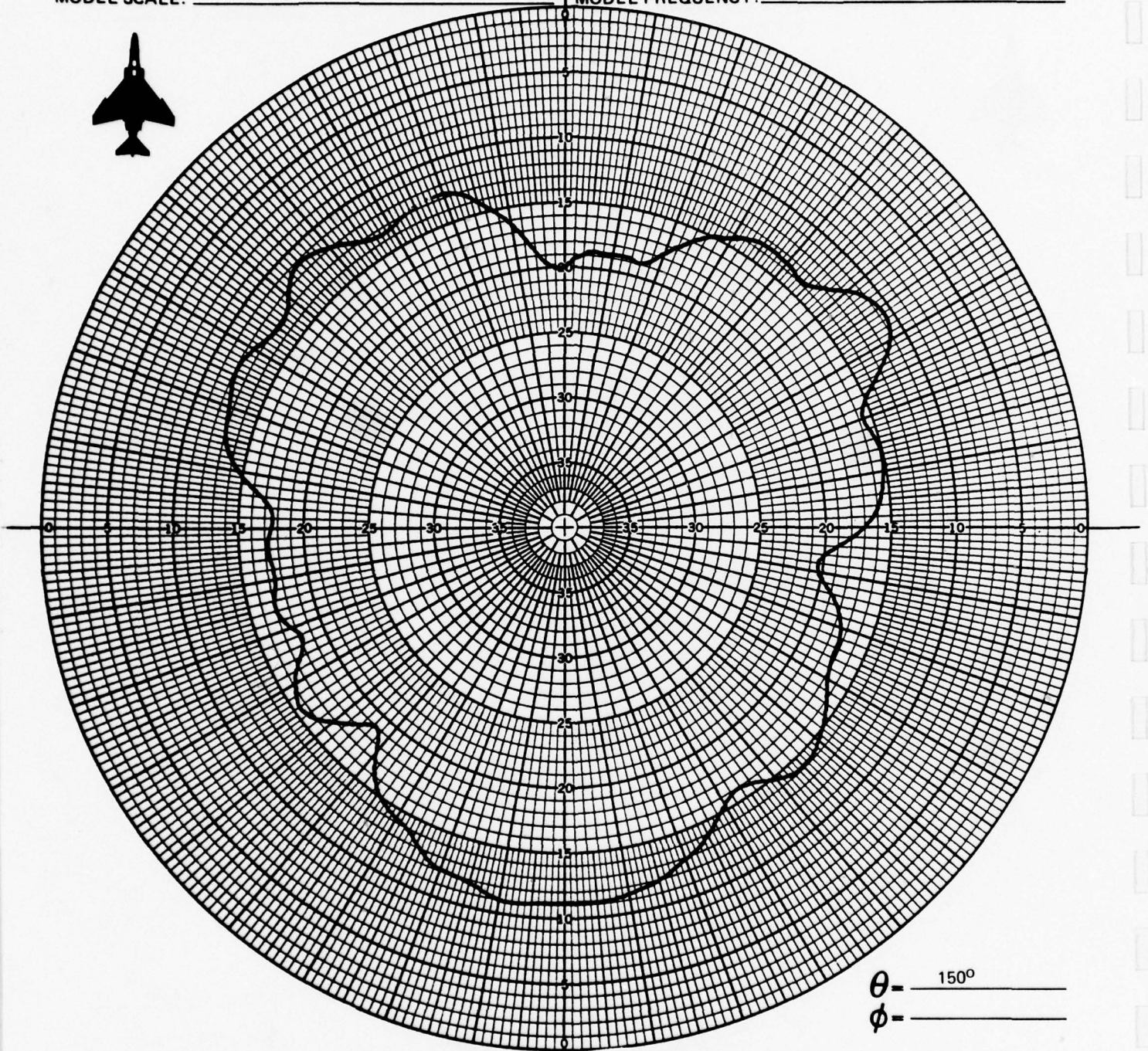
CONFIGURATION: 29
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: 285 FT
OBSERVER: PN, BM DATE: 4-18-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 145 MHz
MODEL FREQUENCY: 725 MHz



θ - 150°
 ϕ - _____

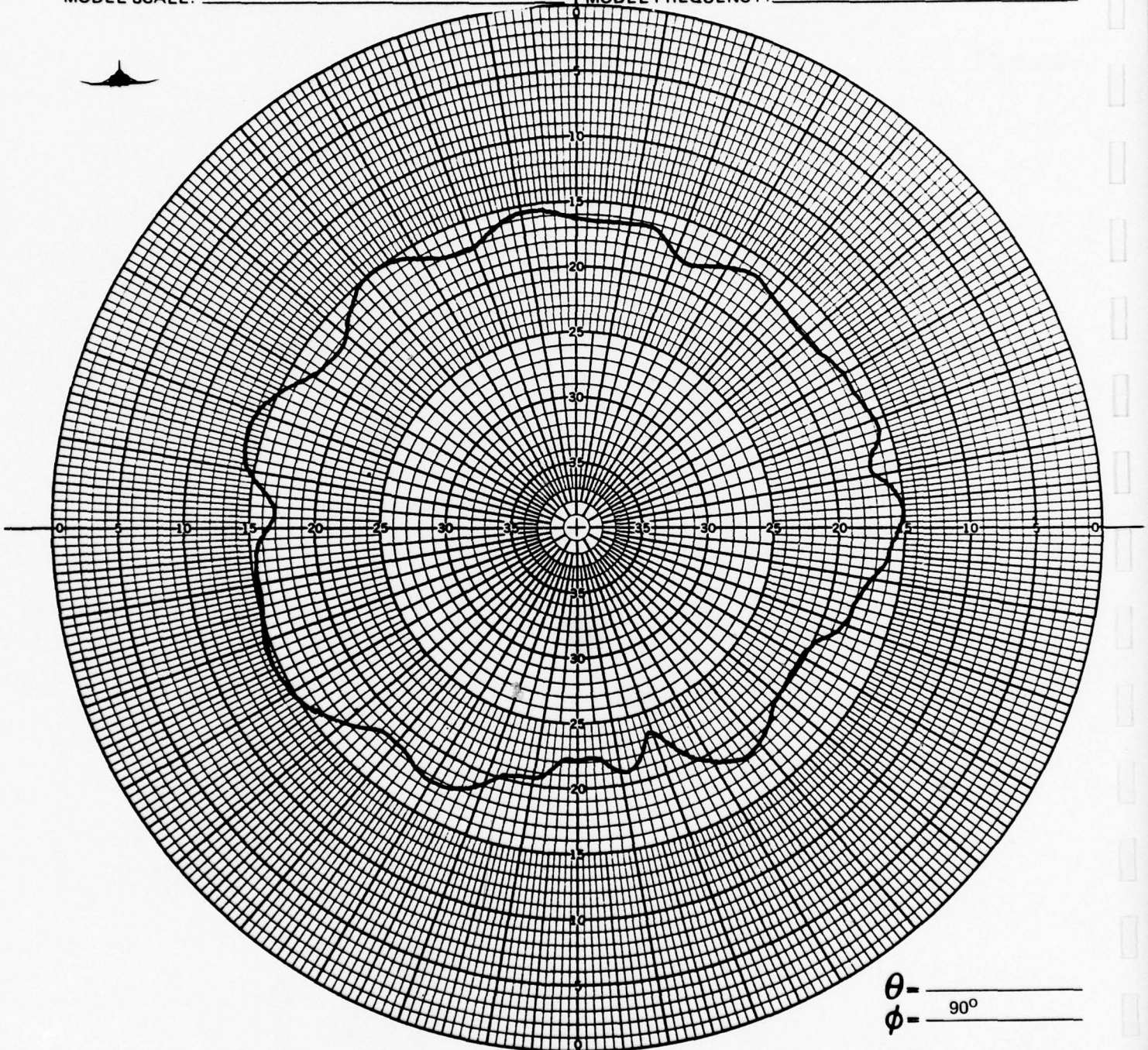
CONFIGURATION: 29
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: 285 FT
OBSERVER: PN, BM DATE: 4-18-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 145 MHz
MODEL FREQUENCY: 725 MHz



θ - _____
 ϕ - 90°

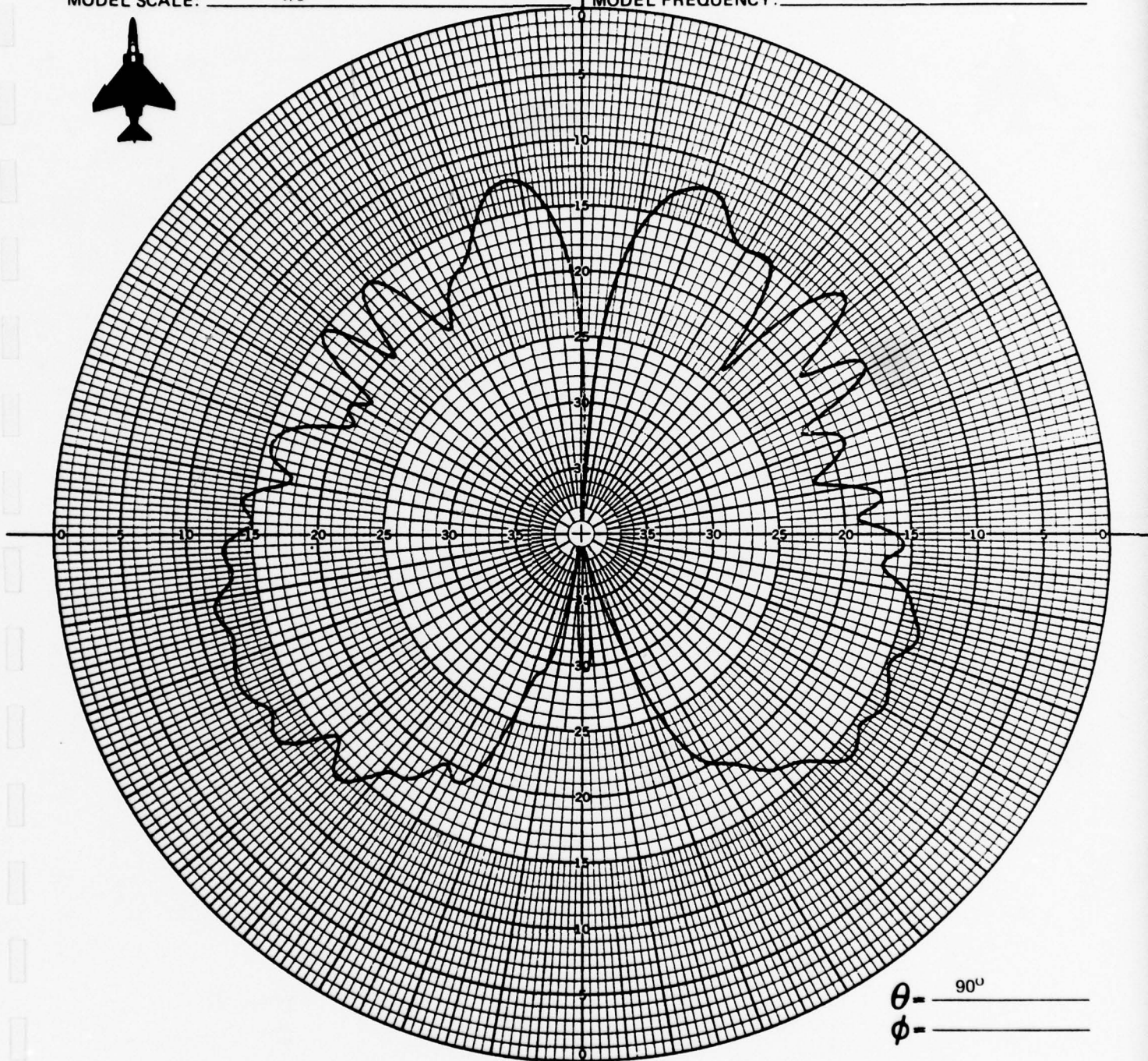
CONFIGURATION: 29
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: 285 FT
OBSERVER: PN, BM DATE: 4-18-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 145 MHz
MODEL FREQUENCY: _____ 725 MHz



θ - 90°
 ϕ - _____

CONFIGURATION: _____ 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

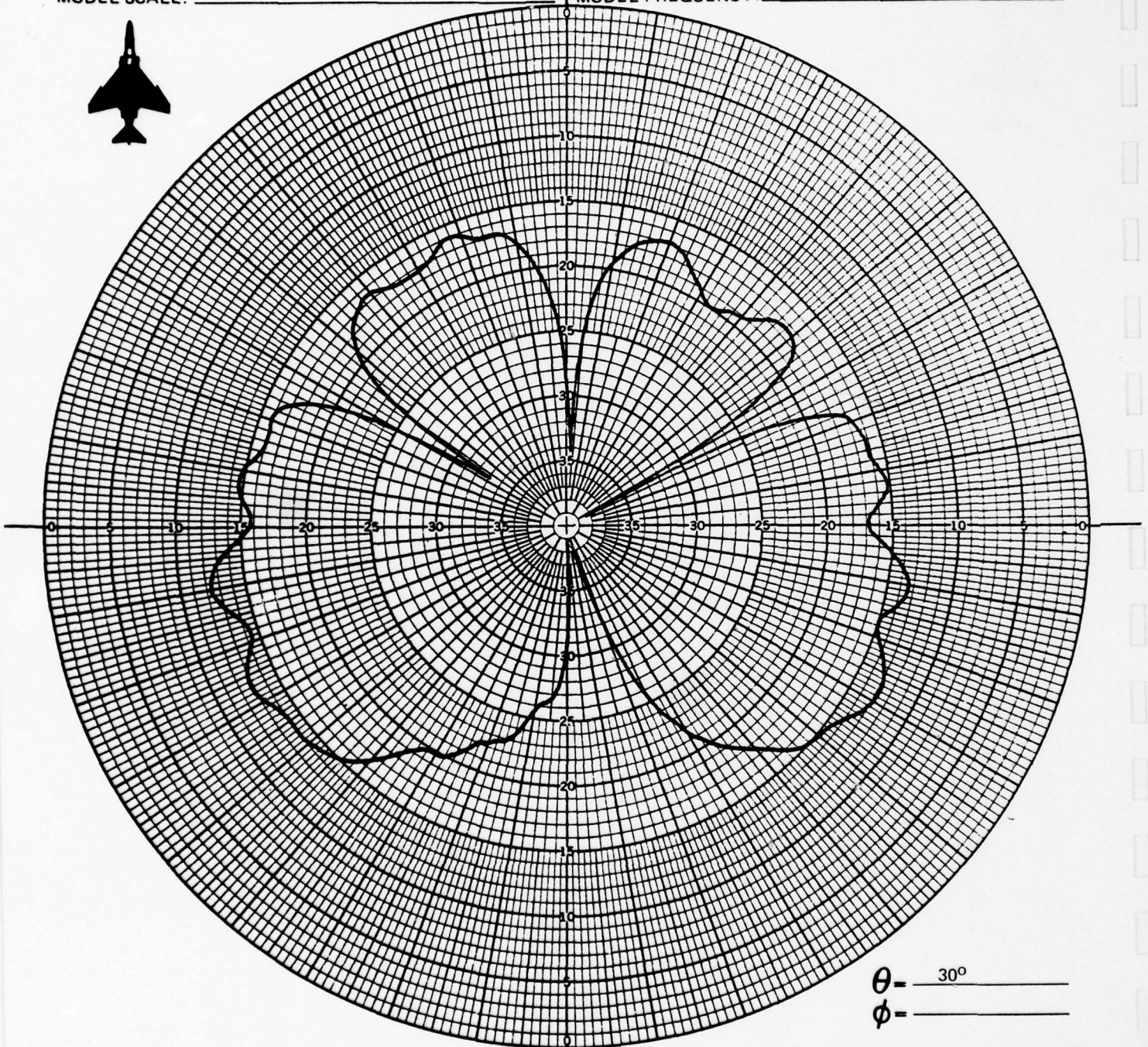
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 4-18-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 145 MHz
MODEL FREQUENCY: _____ 725 MHz



θ - 30°
 ϕ -

CONFIGURATION: _____ 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

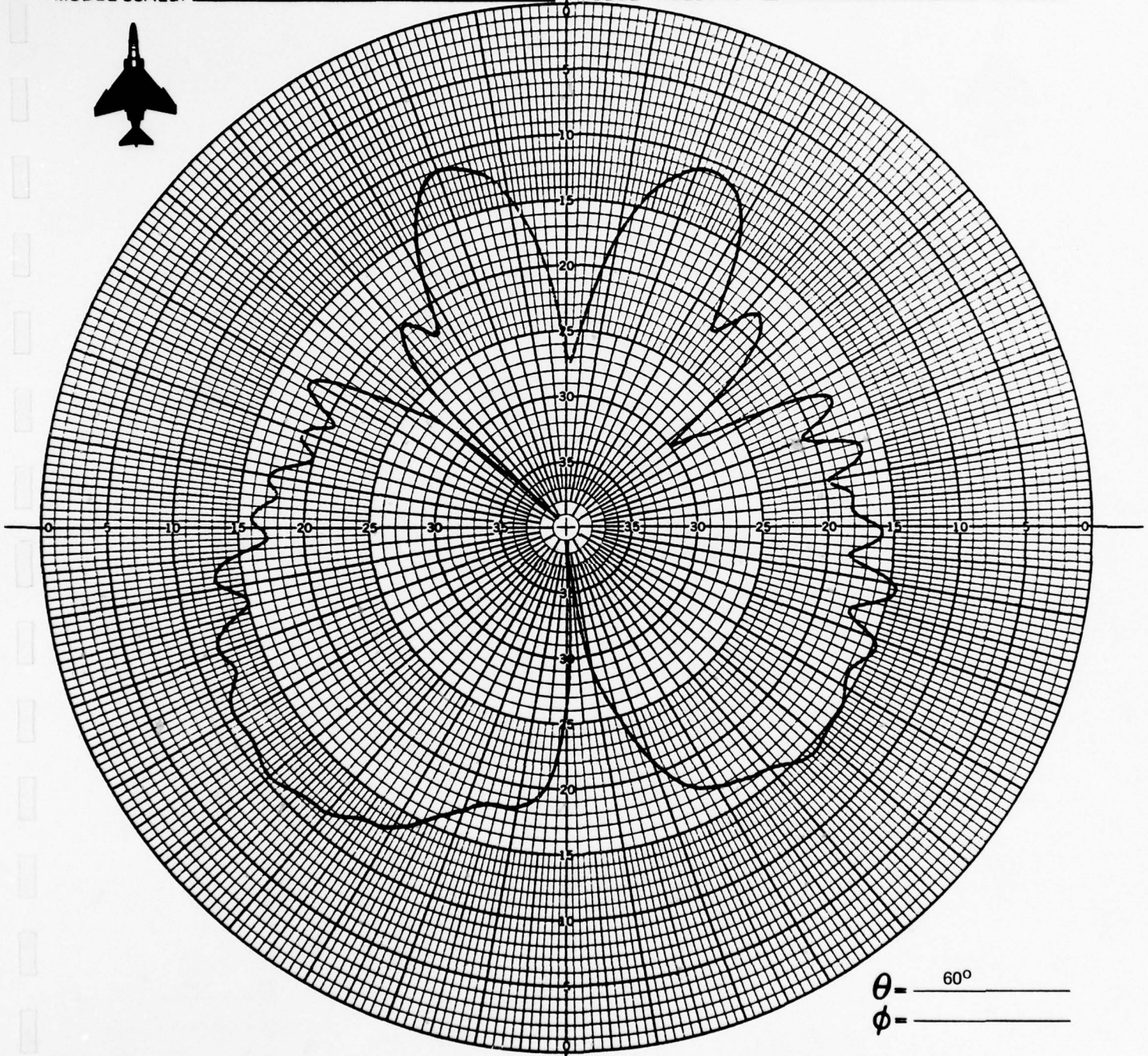
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: 4-18-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 145 MHz
MODEL FREQUENCY: 725 MHz



θ - 60°
 ϕ - _____

CONFIGURATION: 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

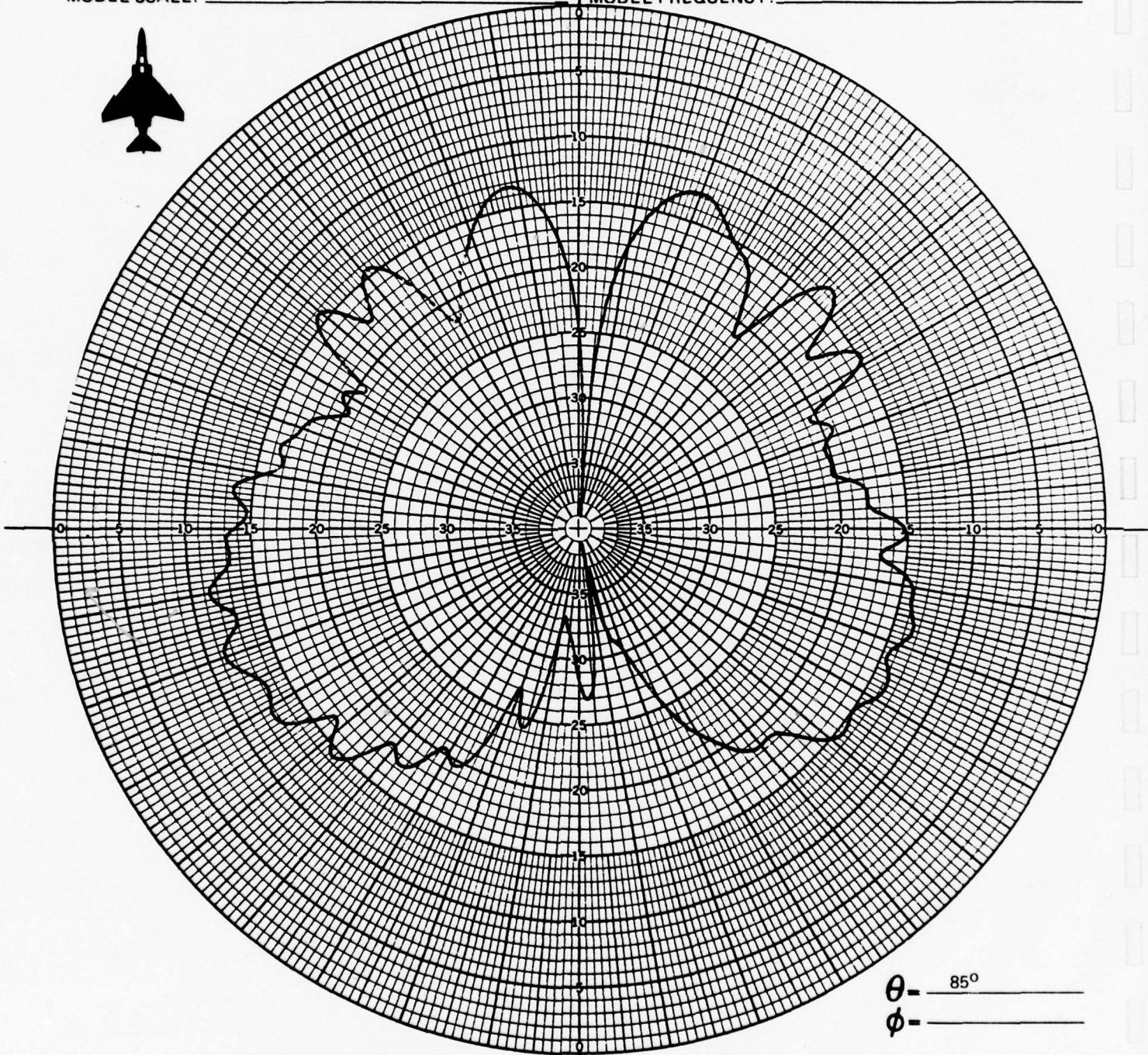
TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 4-18-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 145 MHz
MODEL FREQUENCY: _____ 725 MHz



θ - 85°
 ϕ - _____

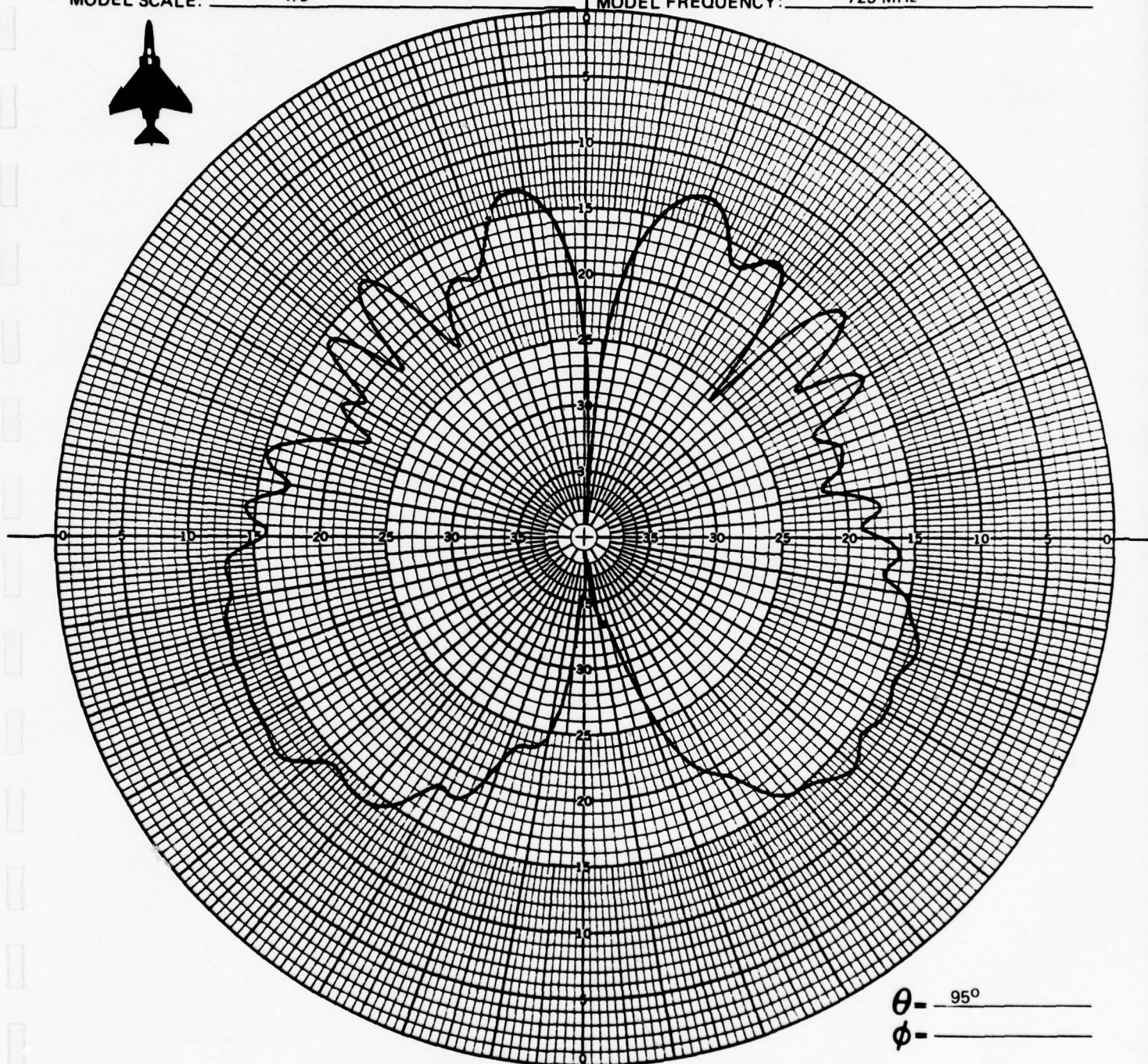
CONFIGURATION: _____ 29
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: E ☒ ϕ ☒ E θ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: 4-18-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 145 MHz
MODEL FREQUENCY: _____ 725 MHz



θ - 95°
 ϕ - _____

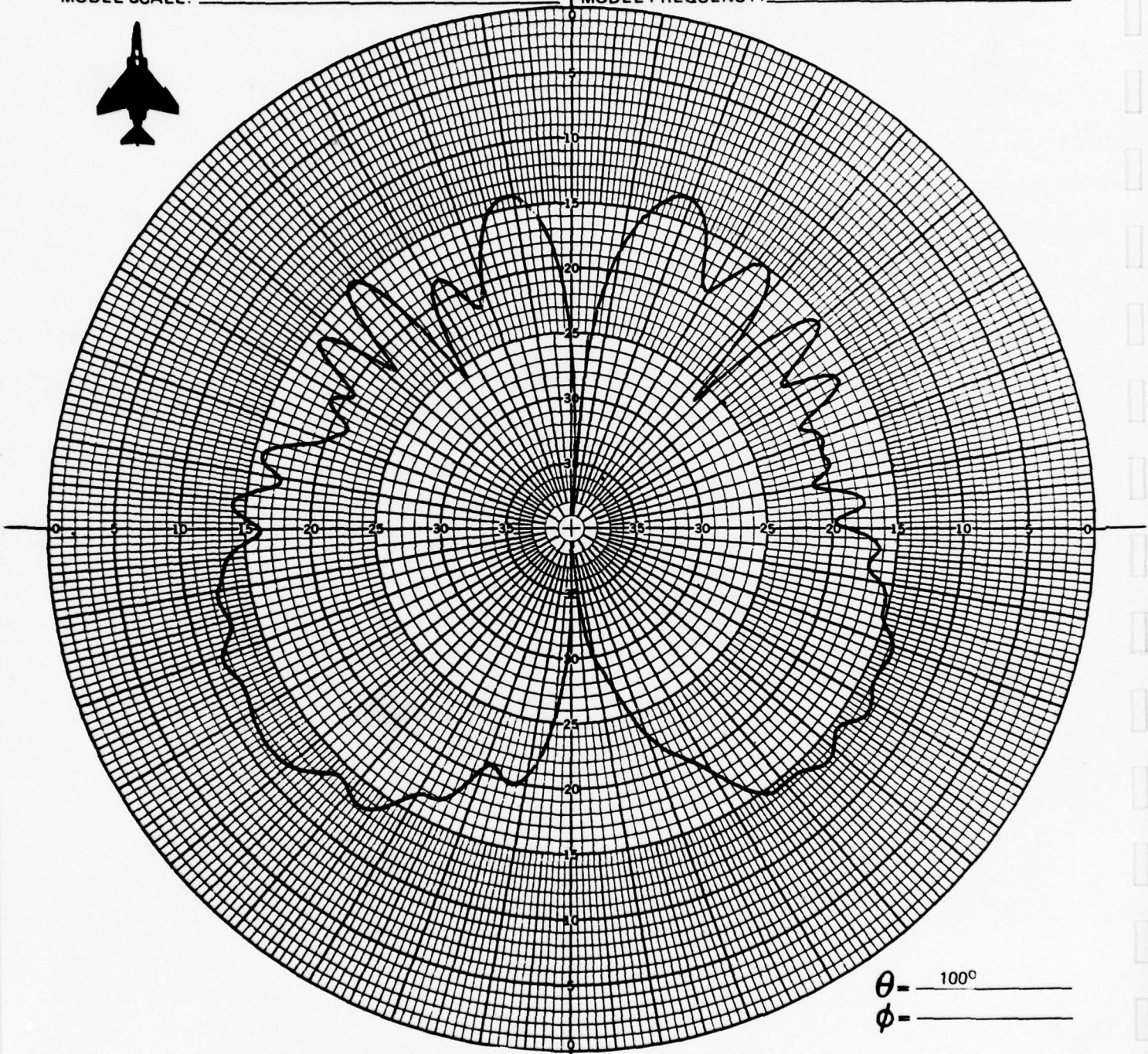
CONFIGURATION: _____ 29
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: 4-18-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 145 MHz
MODEL FREQUENCY: 725 MHz



θ - 100°
 ϕ - _____

CONFIGURATION: 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

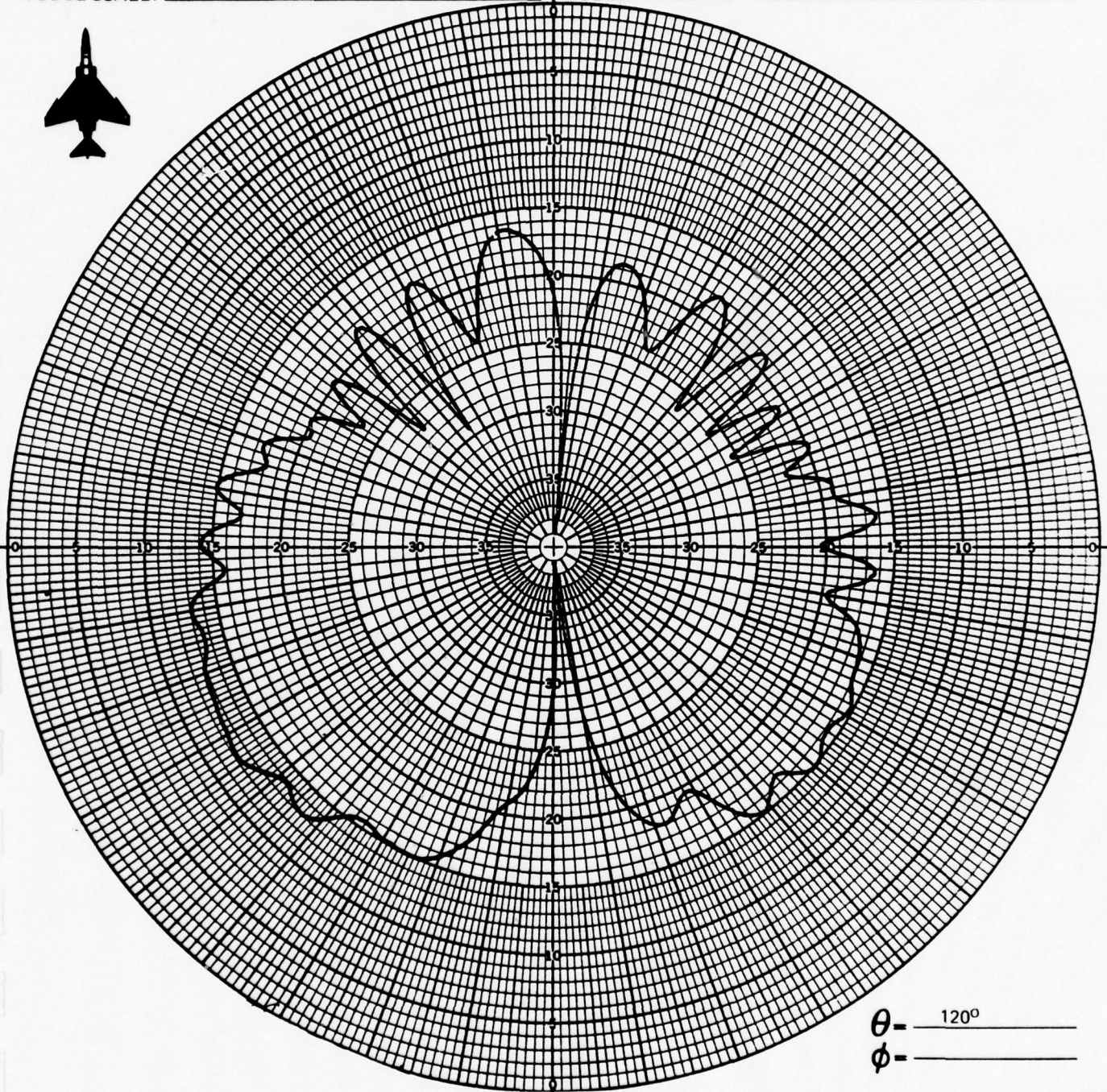
TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 4-18-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 145 MHz
MODEL FREQUENCY: _____ 725 MHz



θ - 120°
 ϕ - _____

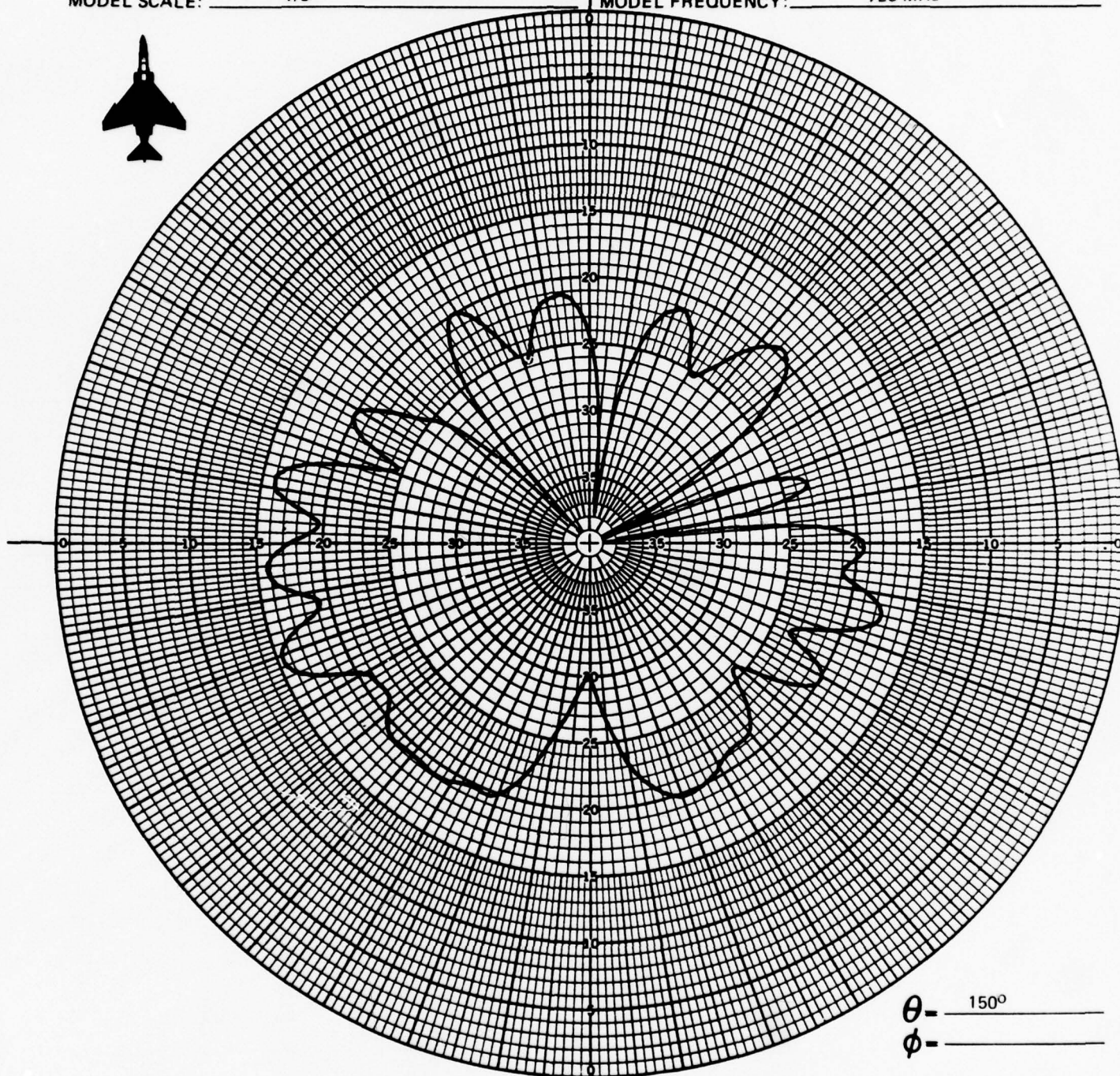
CONFIGURATION: _____ 29
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: E ϕ ☒ E θ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: 4-18-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 145 MHz
MODEL FREQUENCY: _____ 725 MHz



θ - 150°
 ϕ - _____

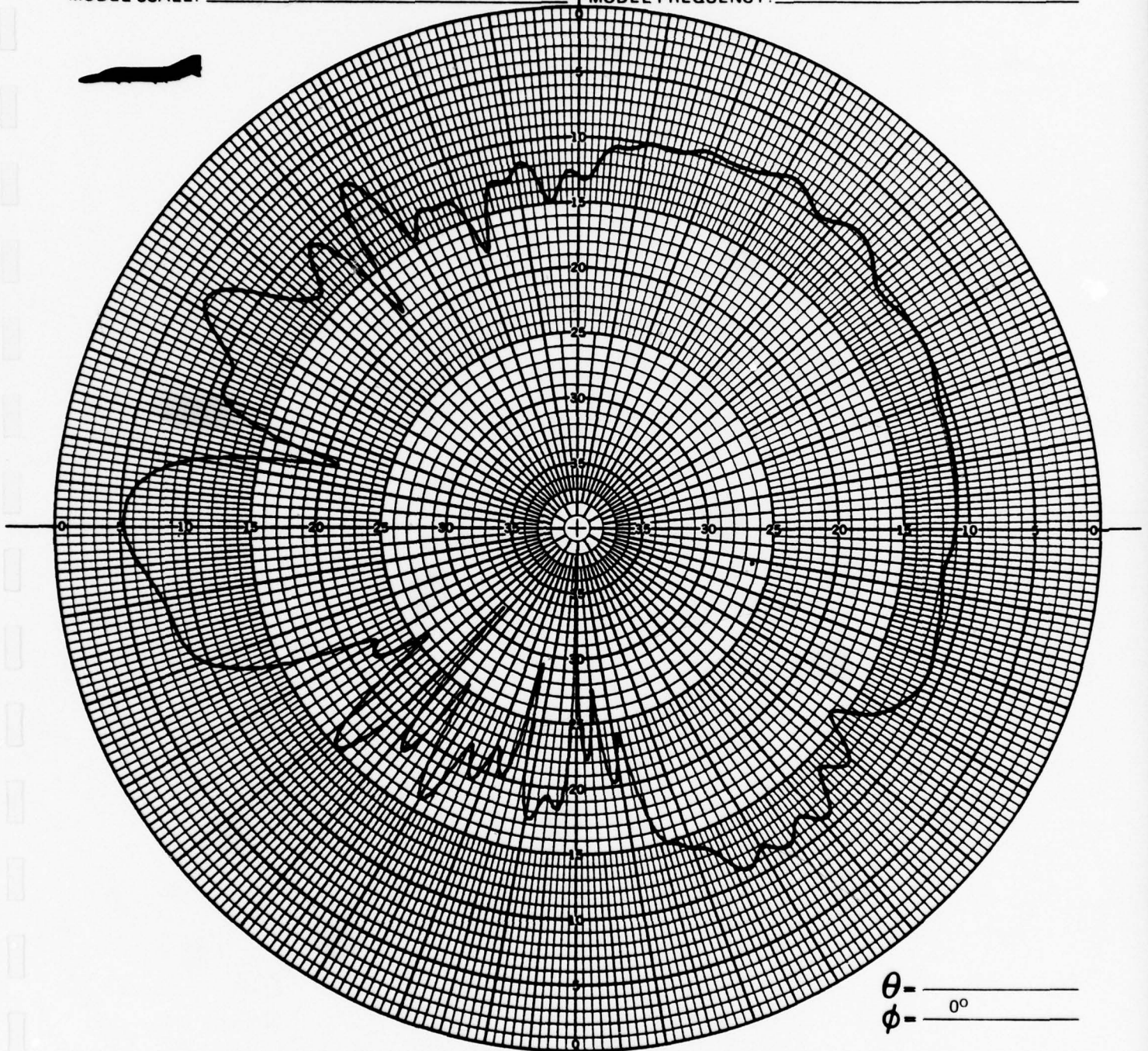
CONFIGURATION: _____ 29
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: 4-18-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 174 MHz
MODEL FREQUENCY: _____ 870 MHz



θ - _____
 ϕ - _____ 0°

CONFIGURATION: _____ 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

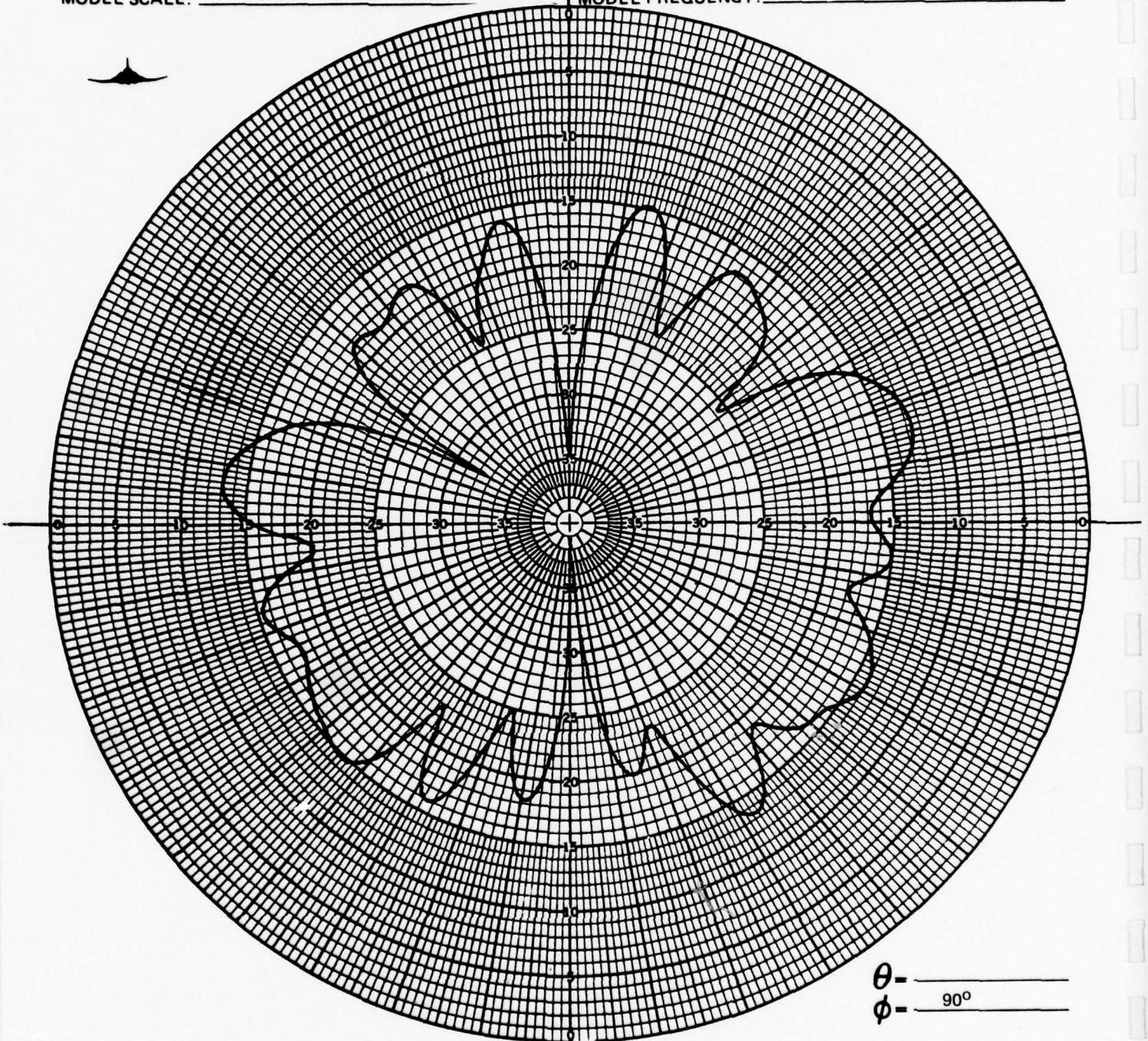
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 4-18-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 174 MHz
MODEL FREQUENCY: 870 MHz



θ - _____
 ϕ - 90°

CONFIGURATION: 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

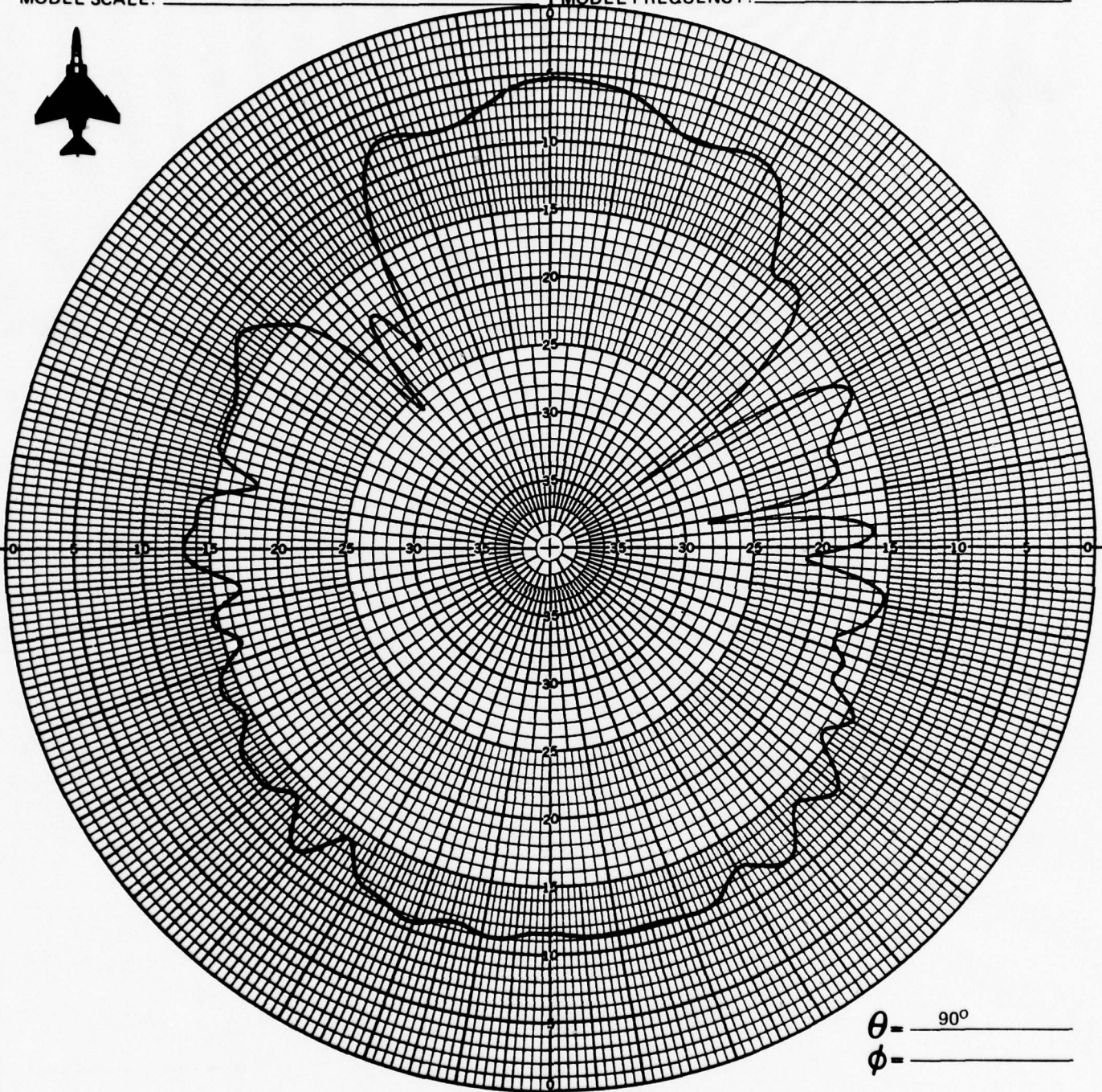
TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 4-18-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 174 MHz
MODEL FREQUENCY: _____ 870 MHz



θ = 90°
 ϕ = _____

CONFIGURATION: _____ 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

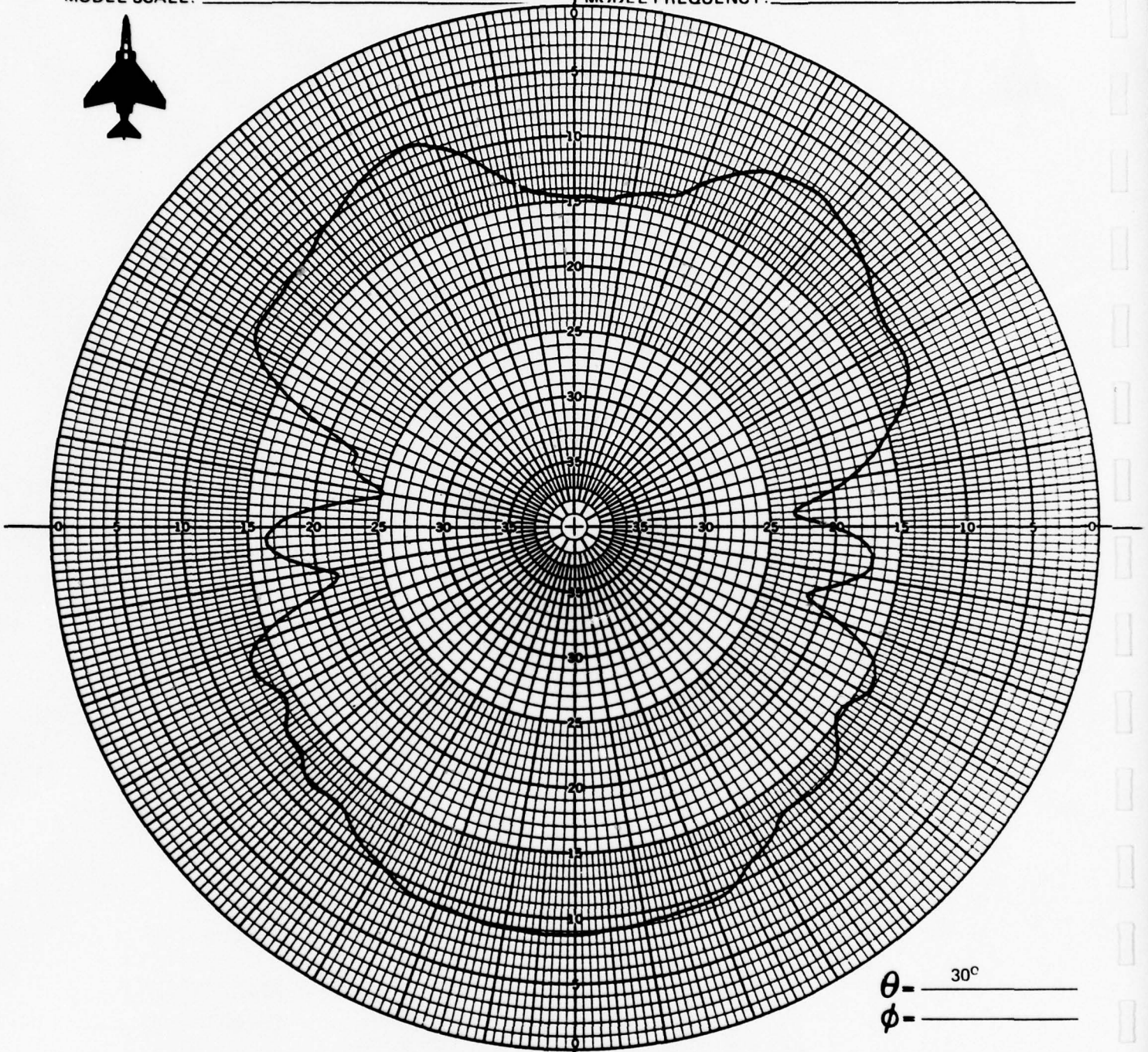
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: 4-18-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 174 MHz
MODEL FREQUENCY: 870 MHz



θ - 30°
 ϕ - _____

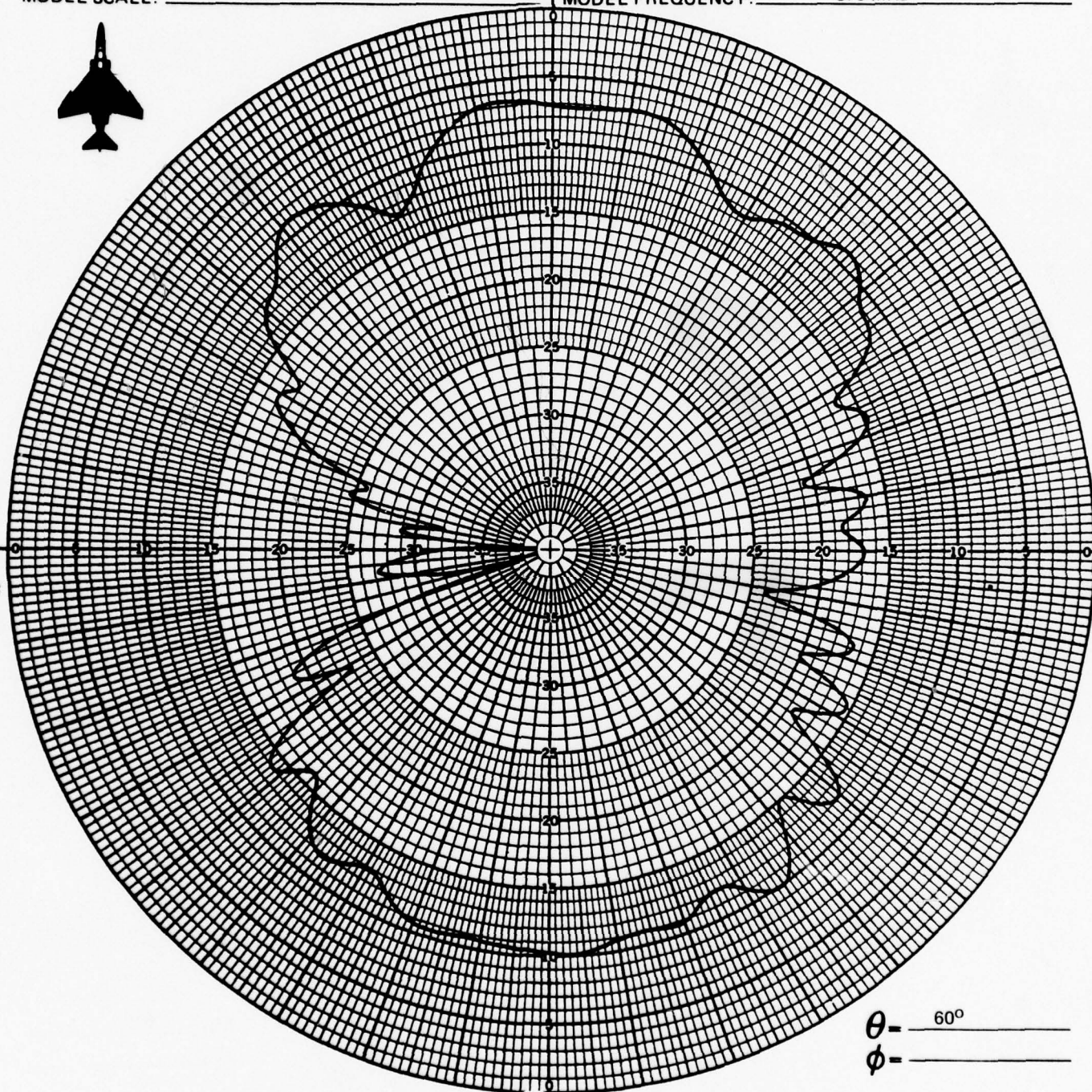
CONFIGURATION: 29
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: E ϕ ☐ E θ ☒ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: 285 FT
OBSERVER: PN, BM DATE: 4-18-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 174 MHz
MODEL FREQUENCY: 870 MHz



θ - 60°
 ϕ - _____

CONFIGURATION: 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

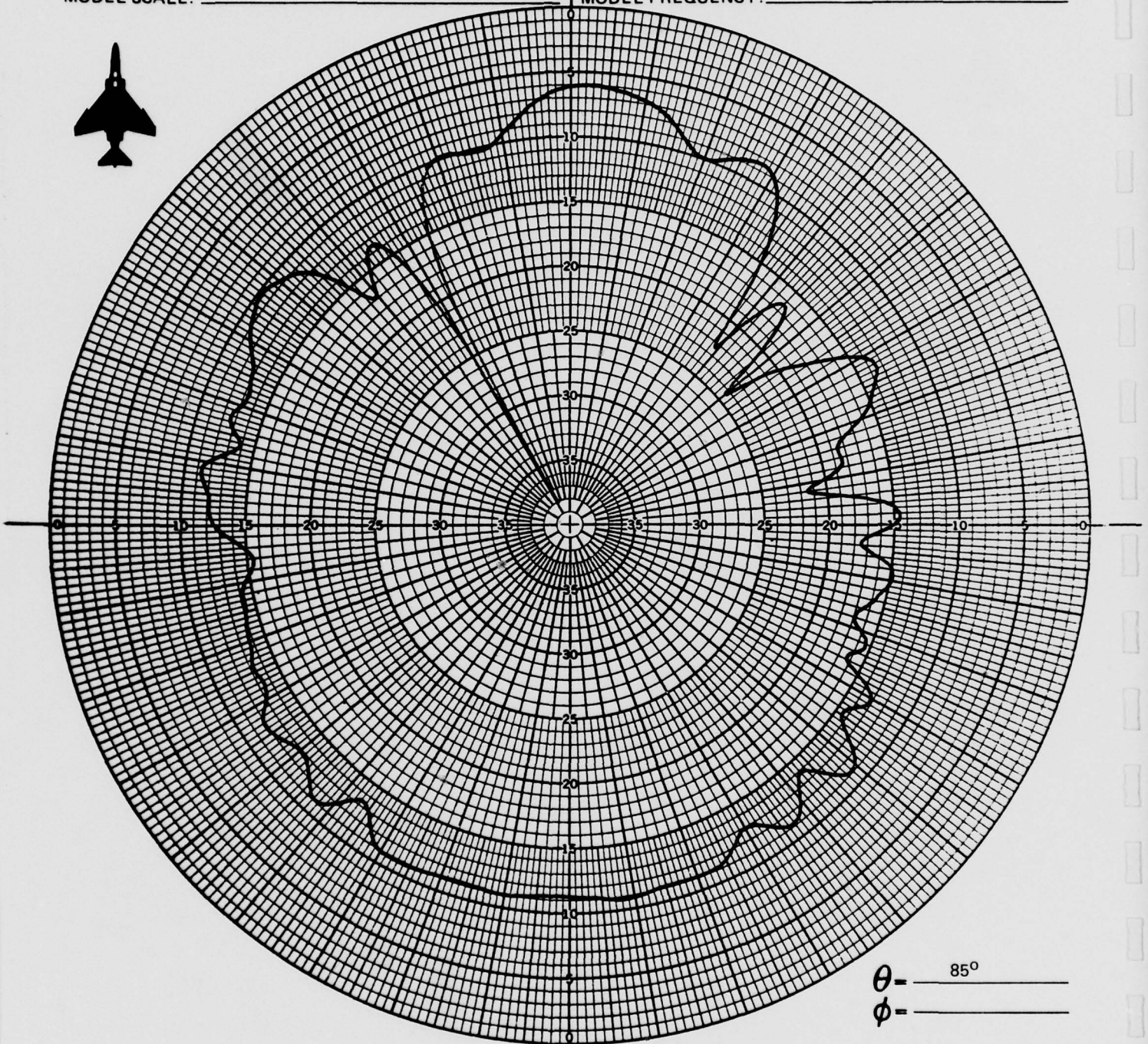
TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 4-18-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 174 MHz
MODEL FREQUENCY: _____ 870 MHz



θ - 85°
 ϕ - _____

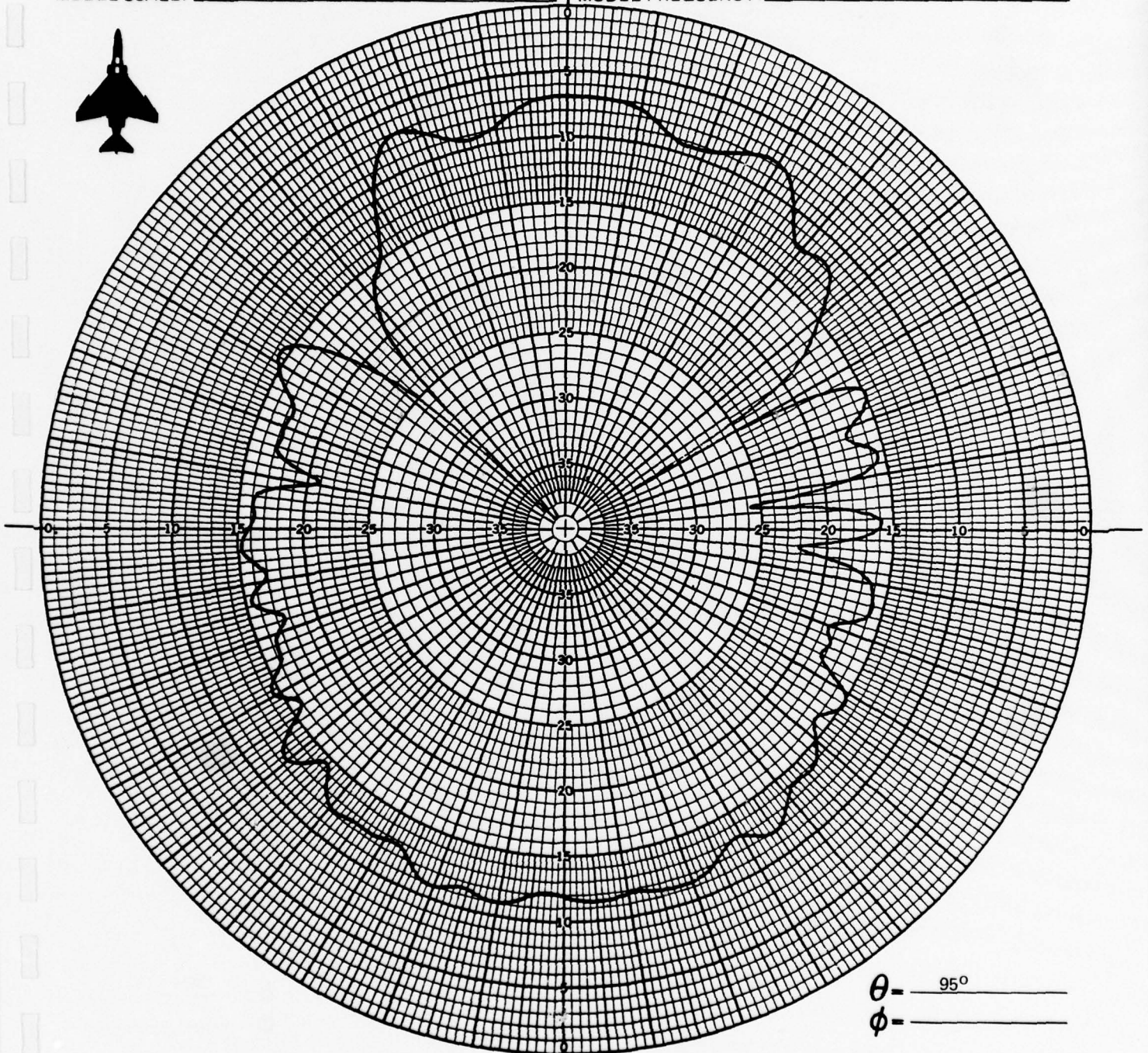
CONFIGURATION: _____ 29
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: E ϕ ☐ E θ ☒ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: _____ 4-18-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 174 MHz
MODEL FREQUENCY: _____ 870 MHz



θ - _____ 95°
 ϕ - _____

CONFIGURATION: _____ 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

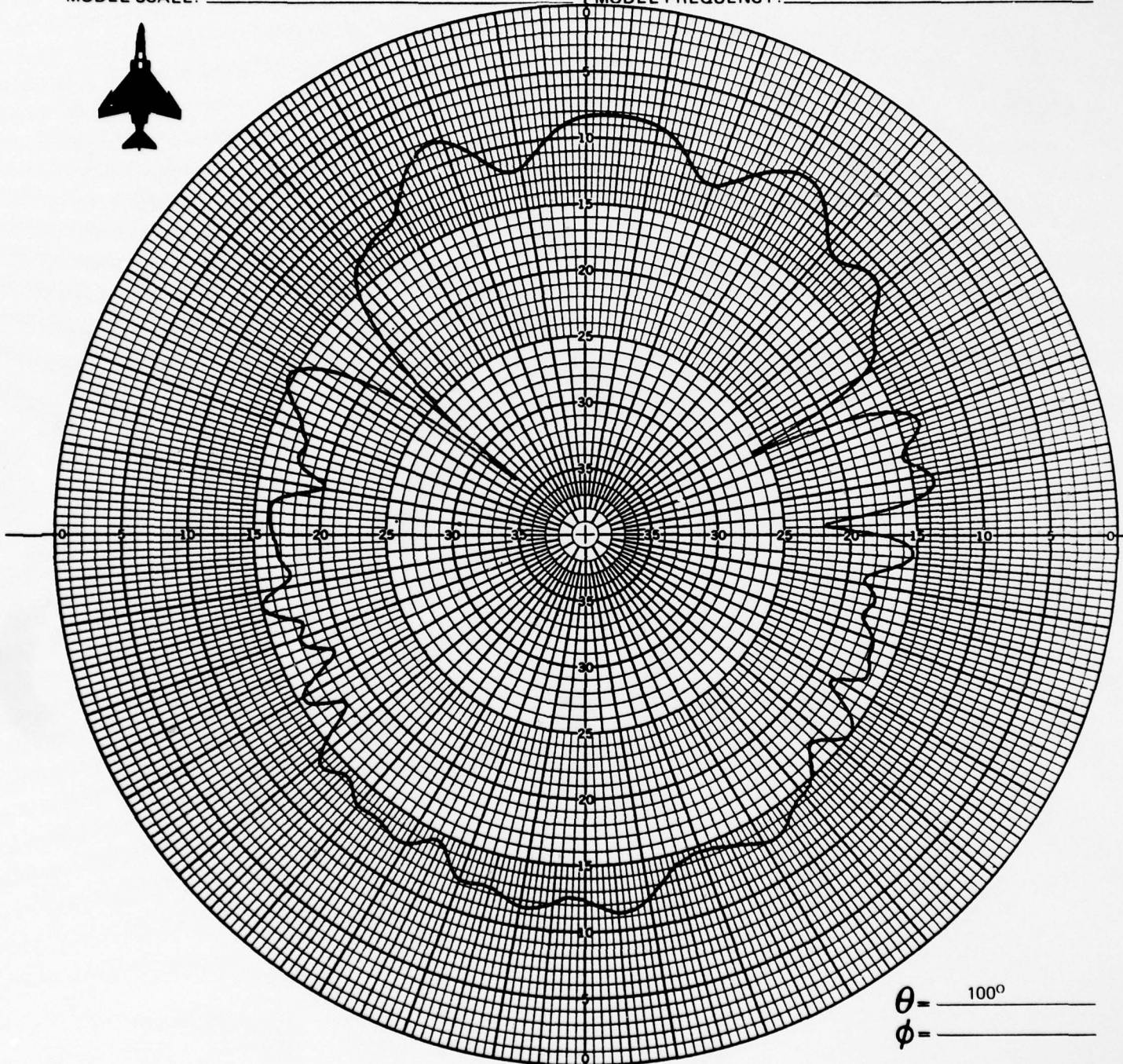
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 4-18-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 174 MHz
MODEL FREQUENCY: _____ 870 MHz



$\theta =$ _____ 100°
 $\phi =$ _____

CONFIGURATION: _____ 29

INTEGRATOR COUNT: _____

REMARKS: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

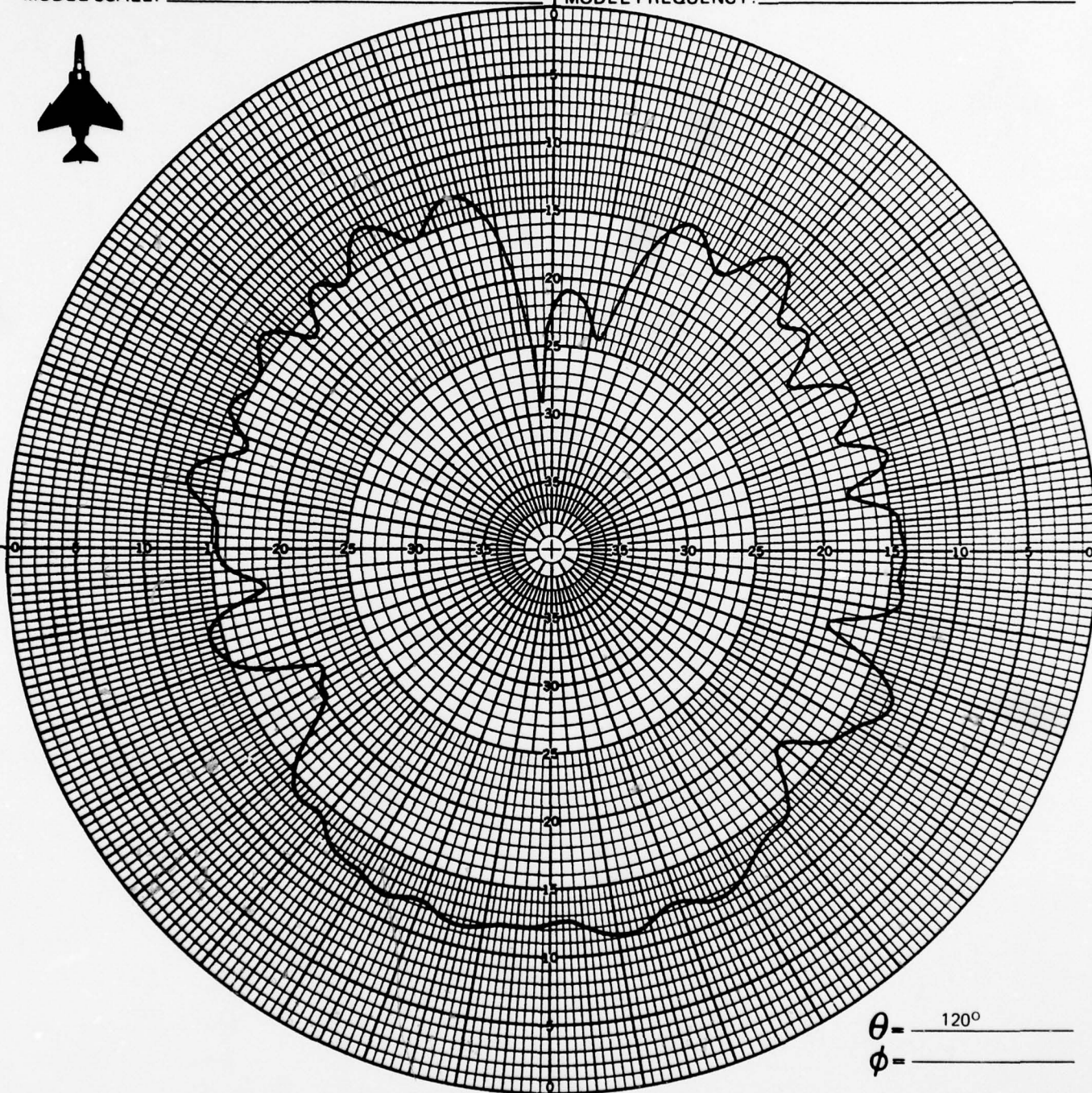
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 4-18-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 174 MHz
MODEL FREQUENCY: _____ 870 MHz



θ = _____ 120°
 ϕ = _____

CONFIGURATION _____ 29

REMARKS _____

INTEGRATOR COUNT: _____

POLARIZATION: E ϕ ☐ E θ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

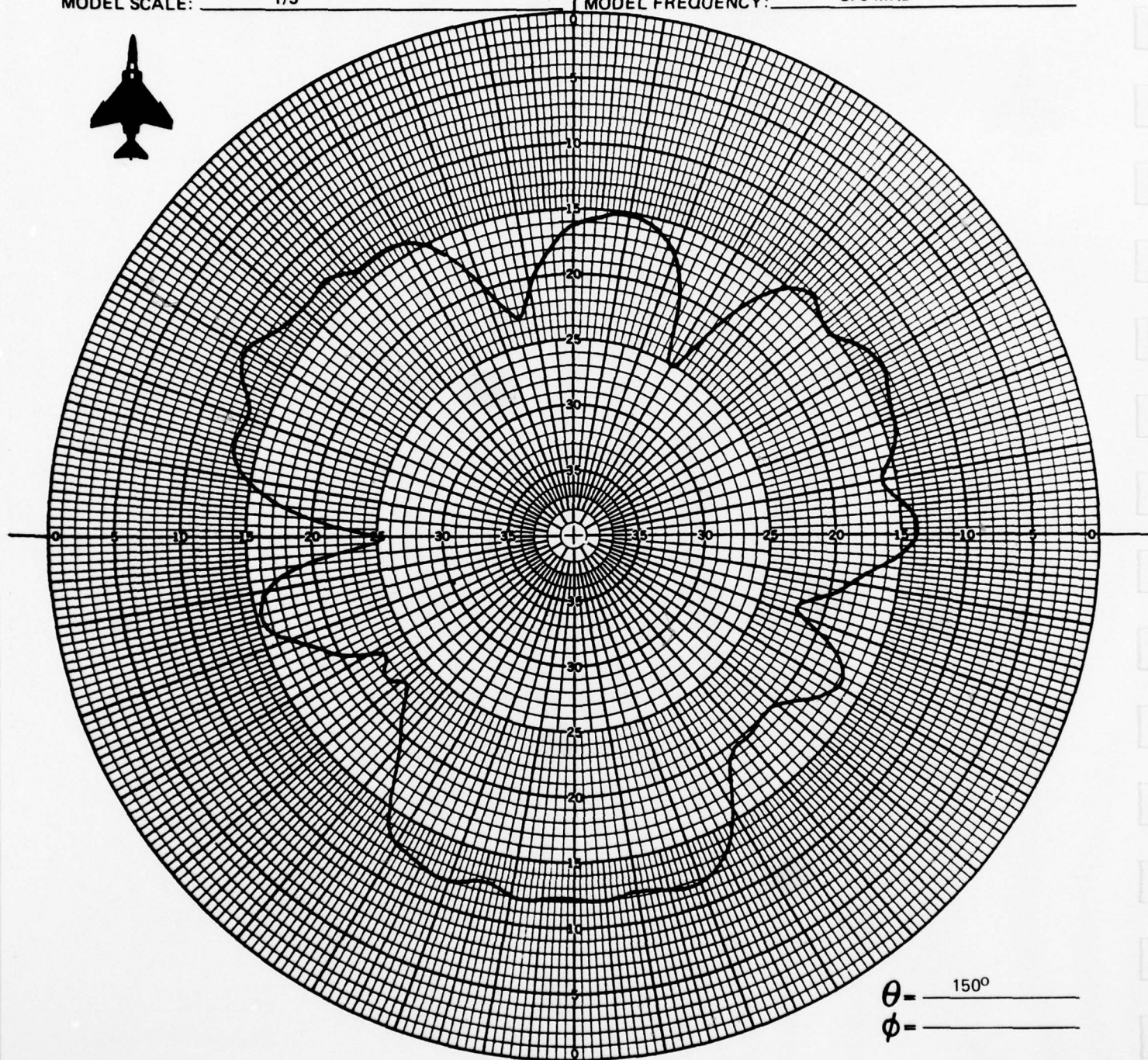
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM _____ DATE: _____ 4-18-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 174 MHz
MODEL FREQUENCY: 870 MHz


$$\theta = 150^\circ$$

$$\phi =$$

CONFIGURATION: 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: E_{ϕ} ☐ E_{θ} ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

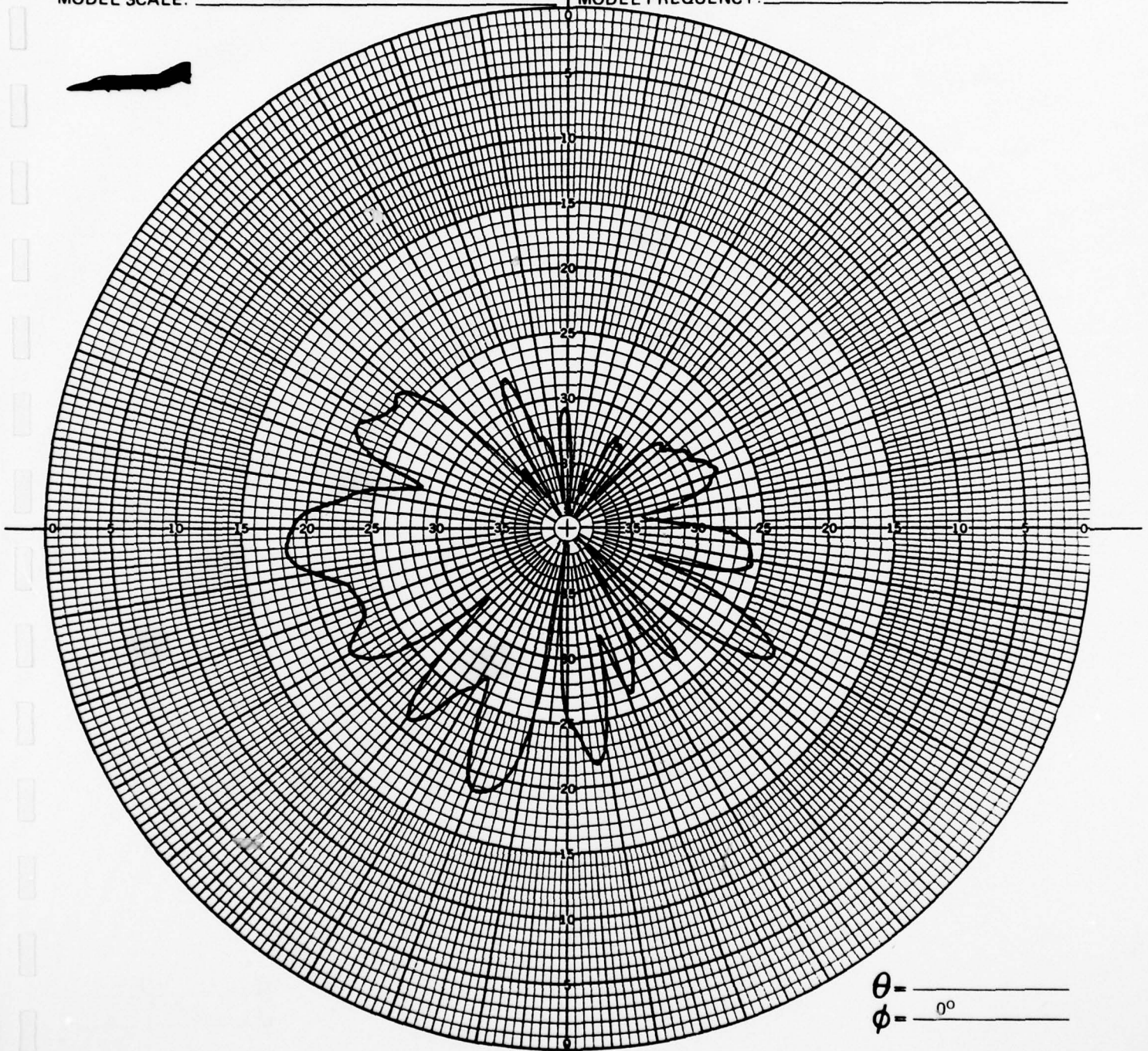
TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 4-18-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 174 MHz
MODEL FREQUENCY: 870 MHz



θ - _____
 ϕ - 0°

CONFIGURATION: 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

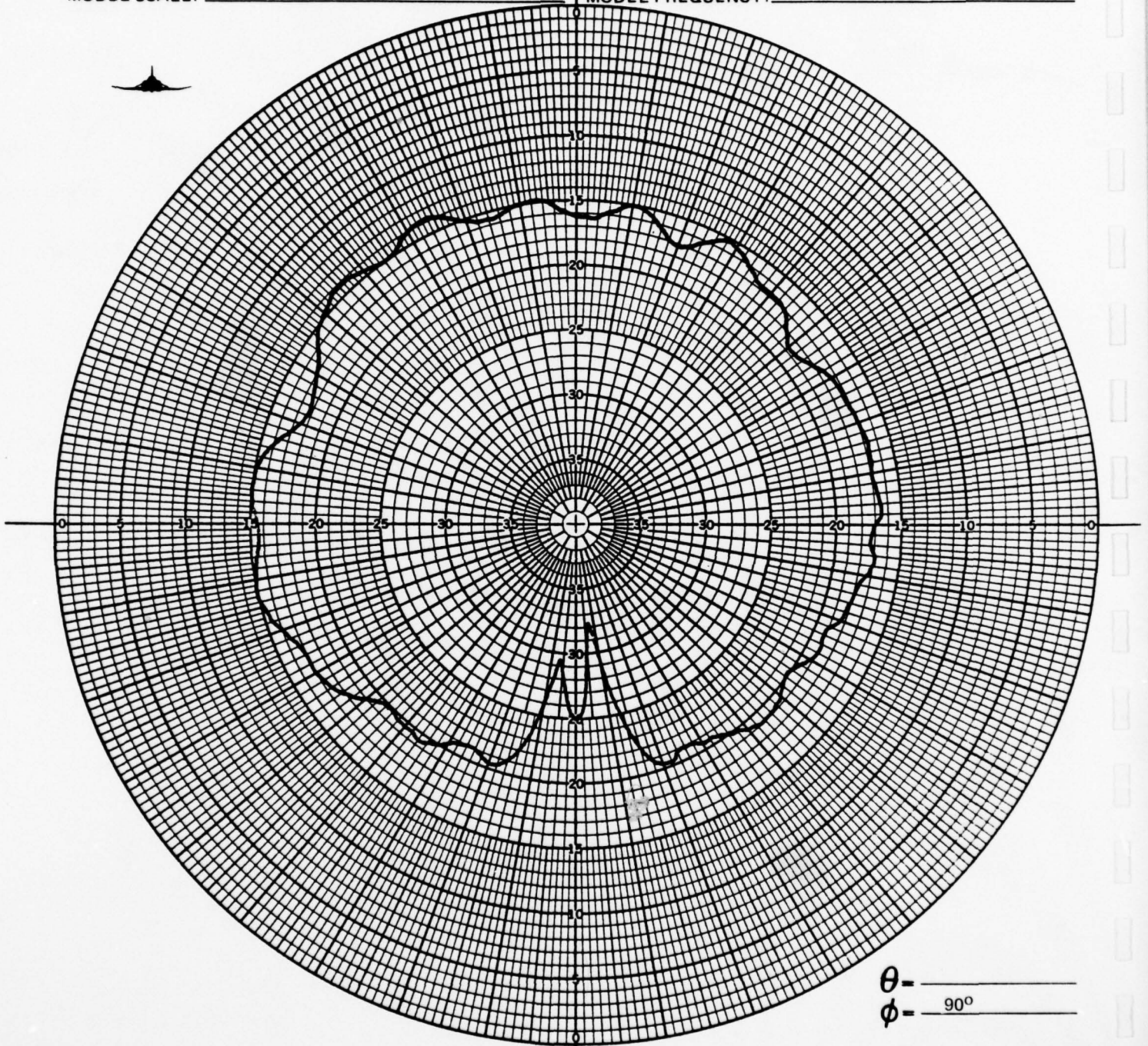
TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 4-18-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 174 MHz
MODEL FREQUENCY: _____ 870 MHz



θ - _____
 ϕ - 90°

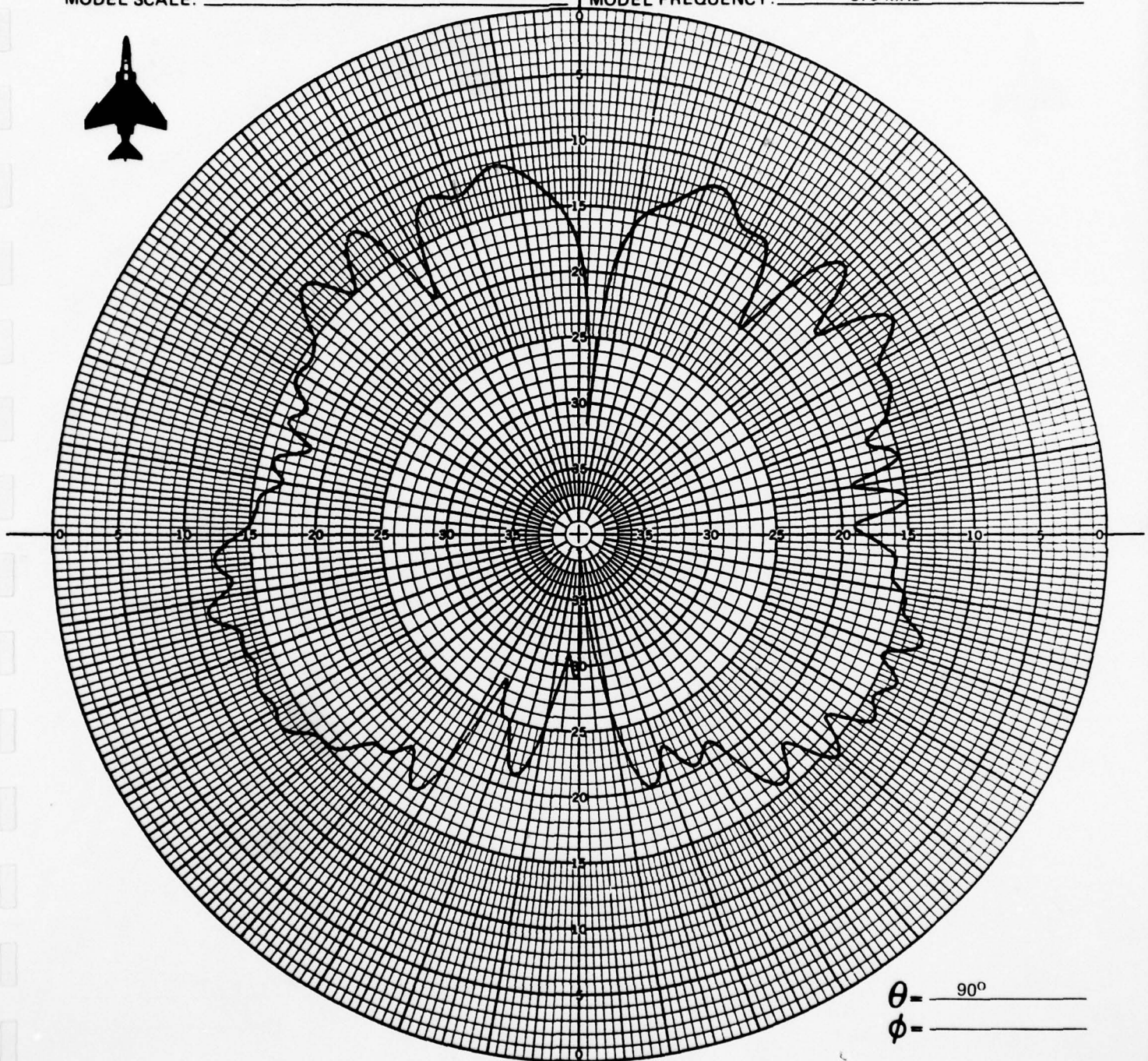
CONFIGURATION: _____ 29
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: E ϕ ☒ E θ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: 4-18-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 174 MHz
MODEL FREQUENCY: _____ 870 MHz



θ - 90°
 ϕ - _____

CONFIGURATION: _____ 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

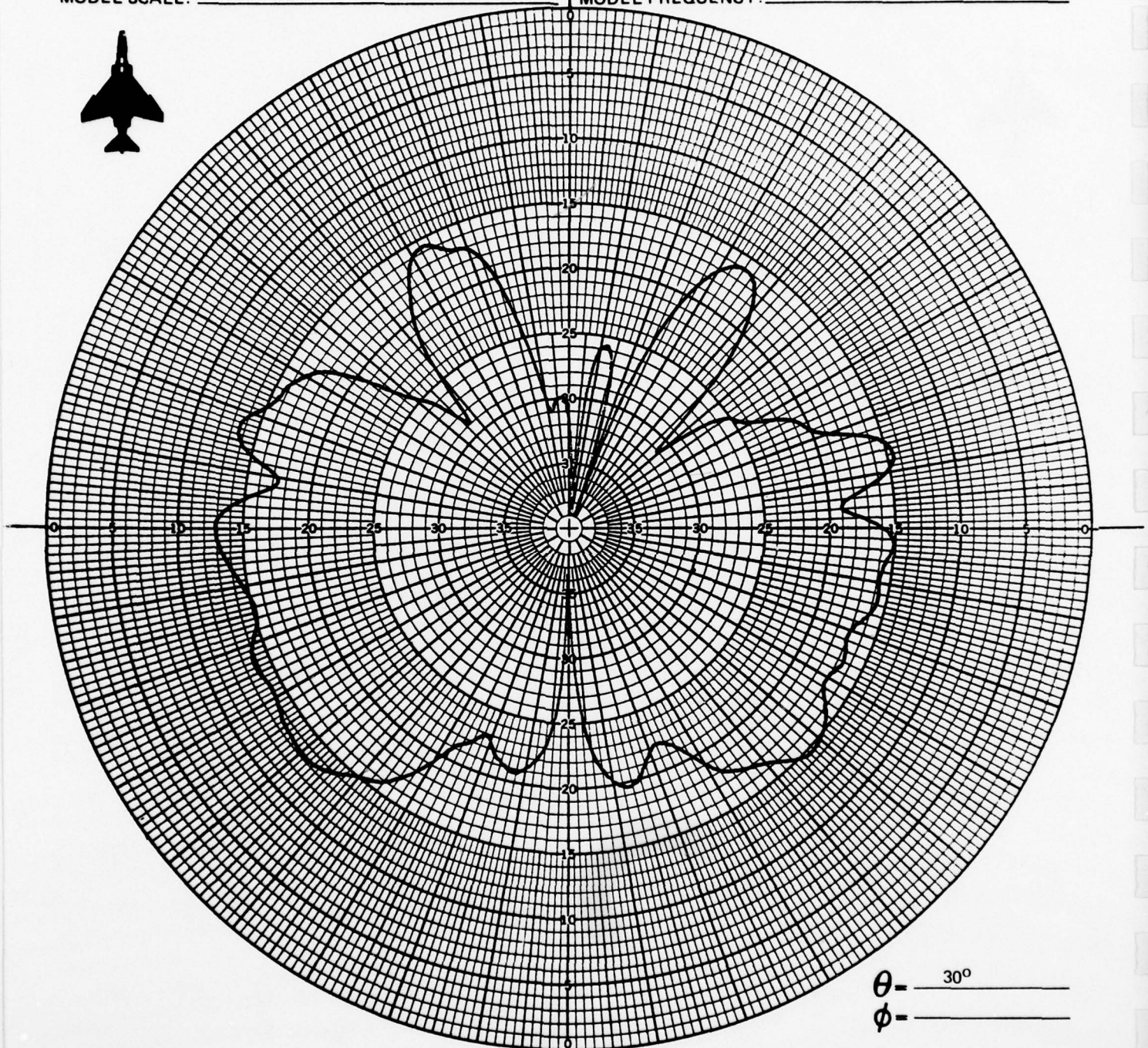
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 4-18-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 174 MHz
MODEL FREQUENCY: 870 MHz



θ - 30°
 ϕ - _____

CONFIGURATION: 29
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: 285 FT
OBSERVER: PN, BM DATE: 4-18-77

DOCUMENT _____

REVISION _____

ANTENNA: _____ FLYING PROTOTYPE

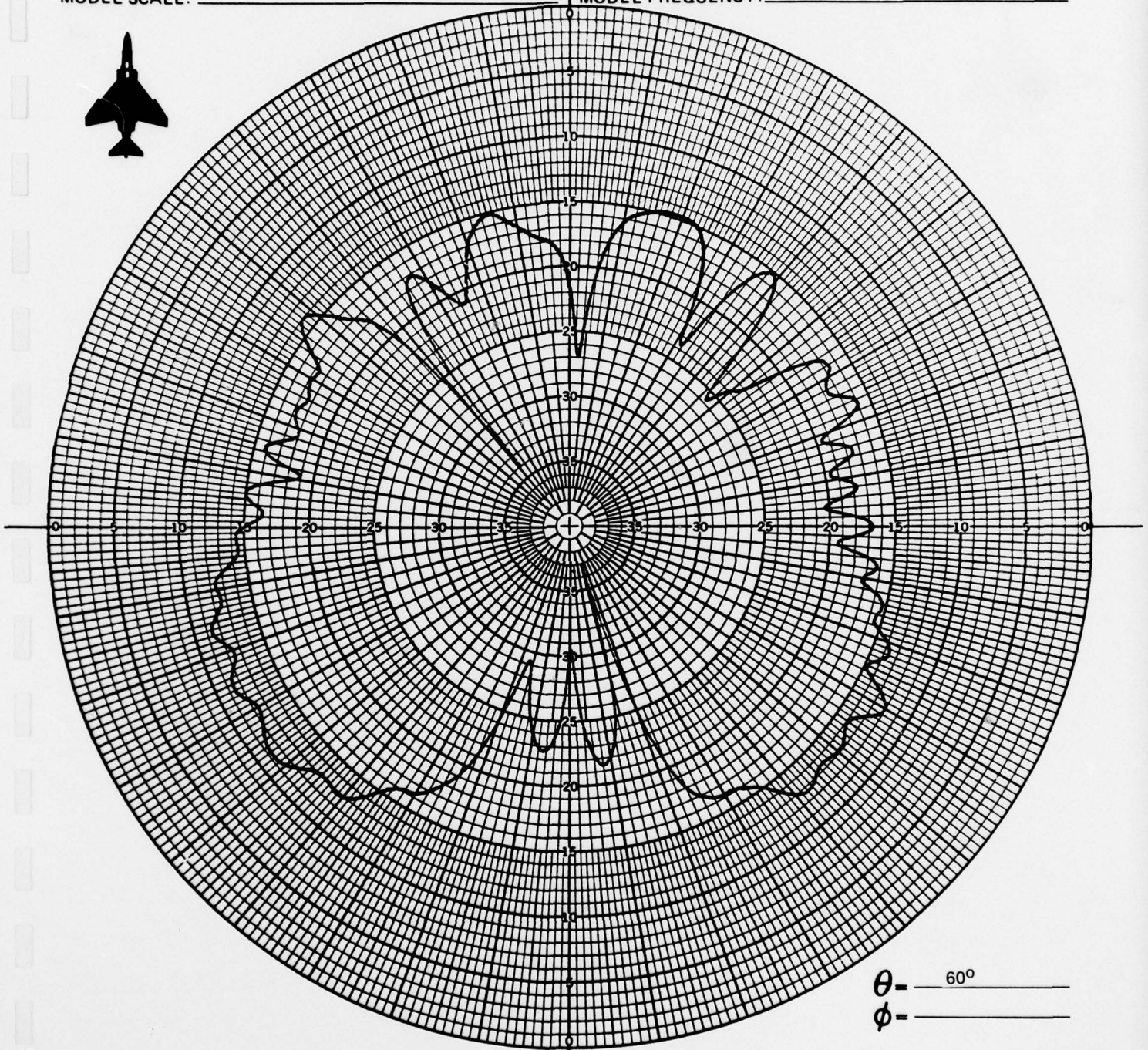
ANTENNA LOCATION: _____ FINCAP

MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)

FULL SCALE FREQUENCY: _____ 174 MHz

MODEL FREQUENCY: _____ 870 MHz



θ - 60°

ϕ - _____

CONFIGURATION: _____ 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

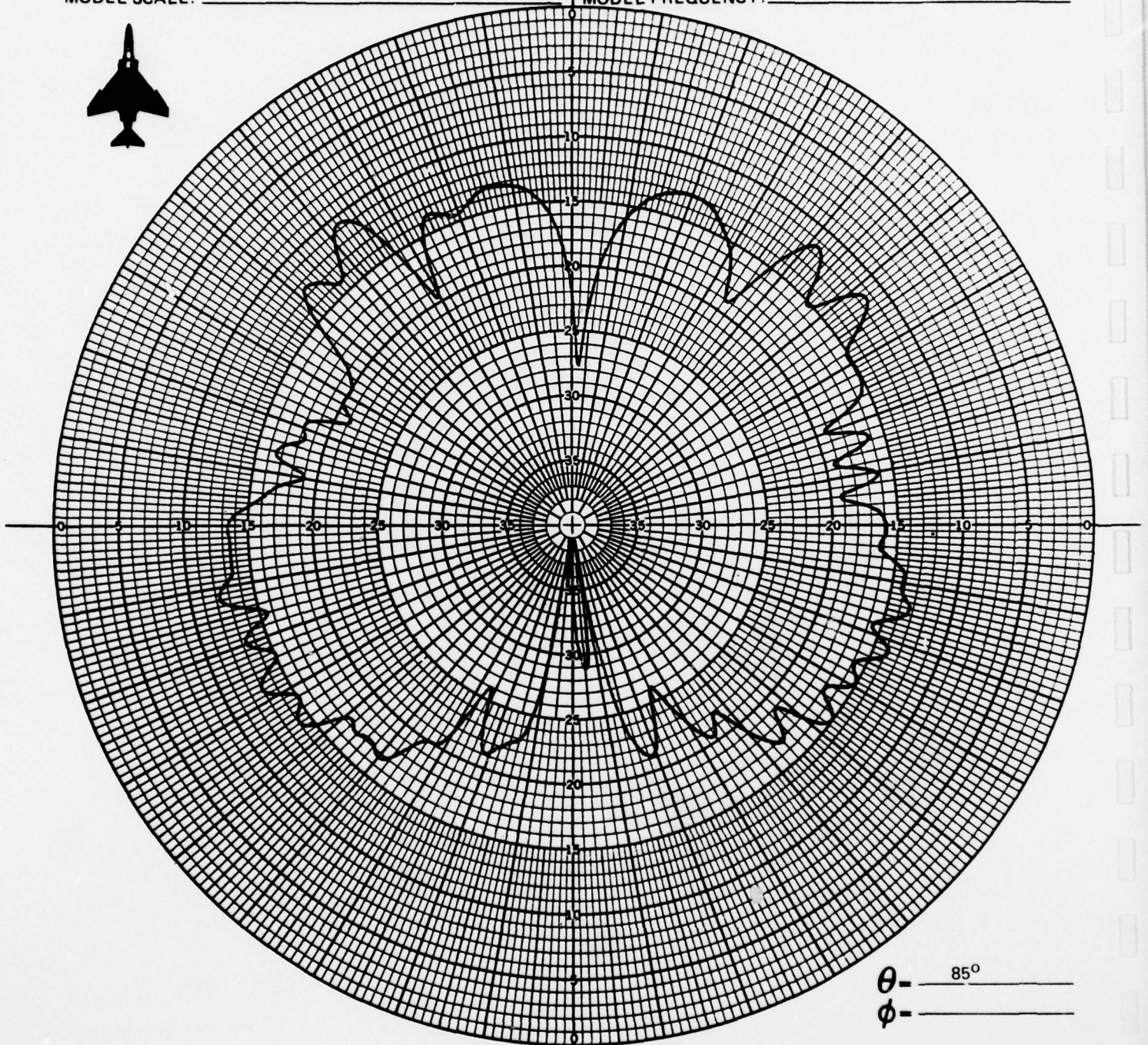
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: 4-18-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 174 MHz
MODEL FREQUENCY: _____ 870 MHz



θ - 85°
 ϕ - _____

CONFIGURATION: _____ 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

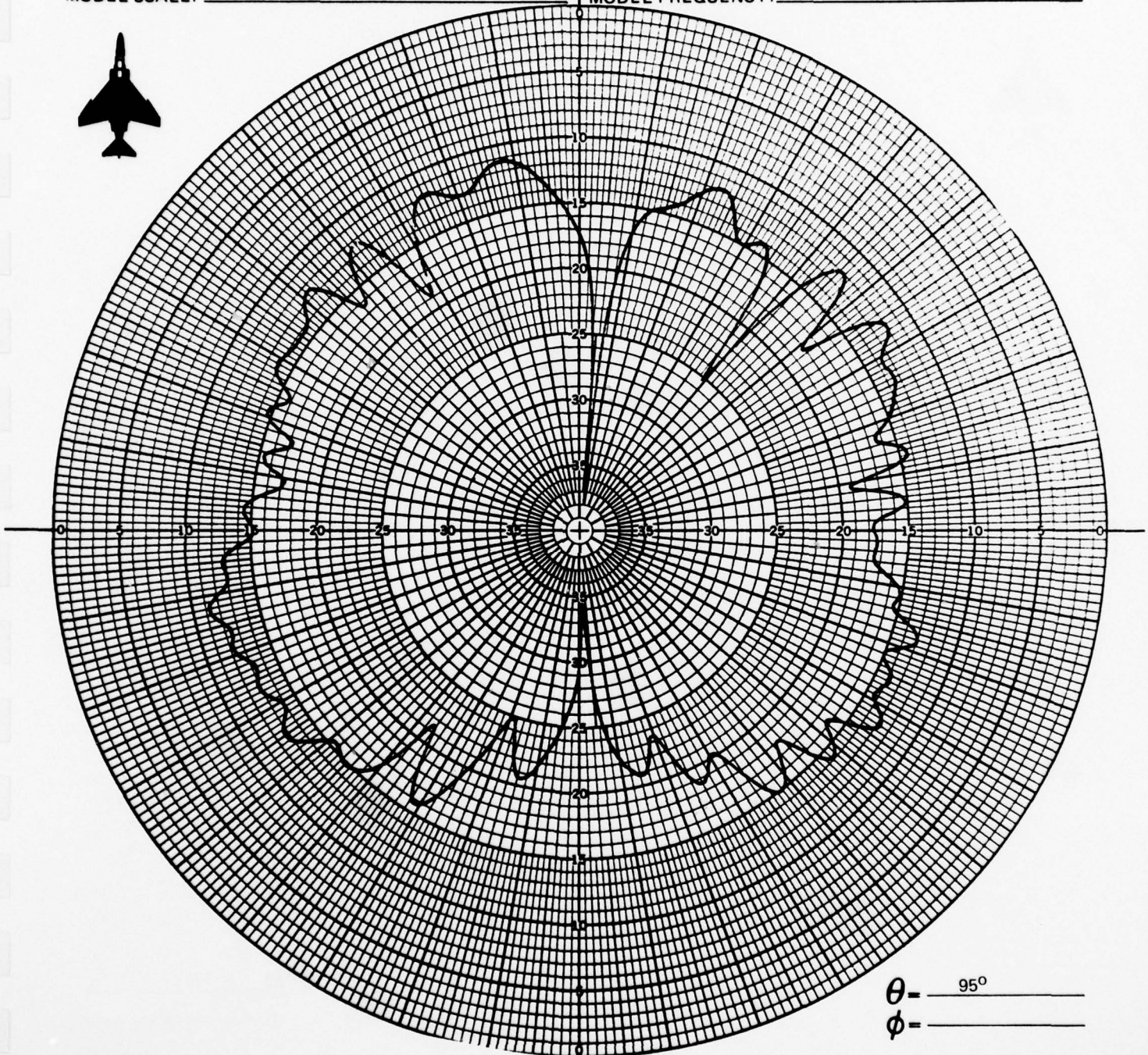
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: 4-18-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 174 MHz
MODEL FREQUENCY: _____ 870 MHz



θ = _____ 95°
 ϕ = _____

CONFIGURATION: _____ 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

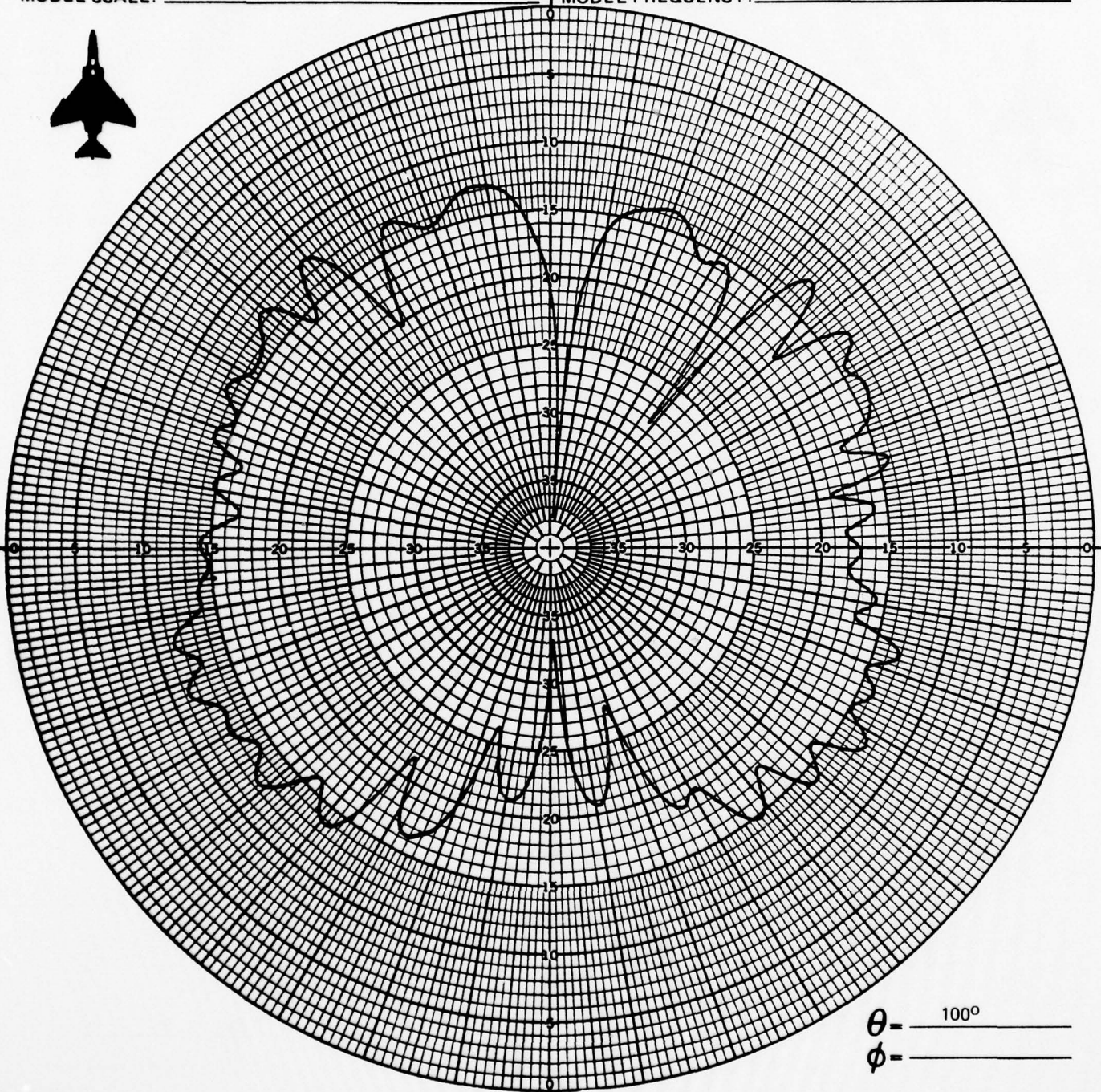
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: 4-18-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 174 MHz
MODEL FREQUENCY: _____ 870 MHz



θ - _____ 100°
 ϕ - _____

CONFIGURATION: _____ 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: E ϕ ☒ E θ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

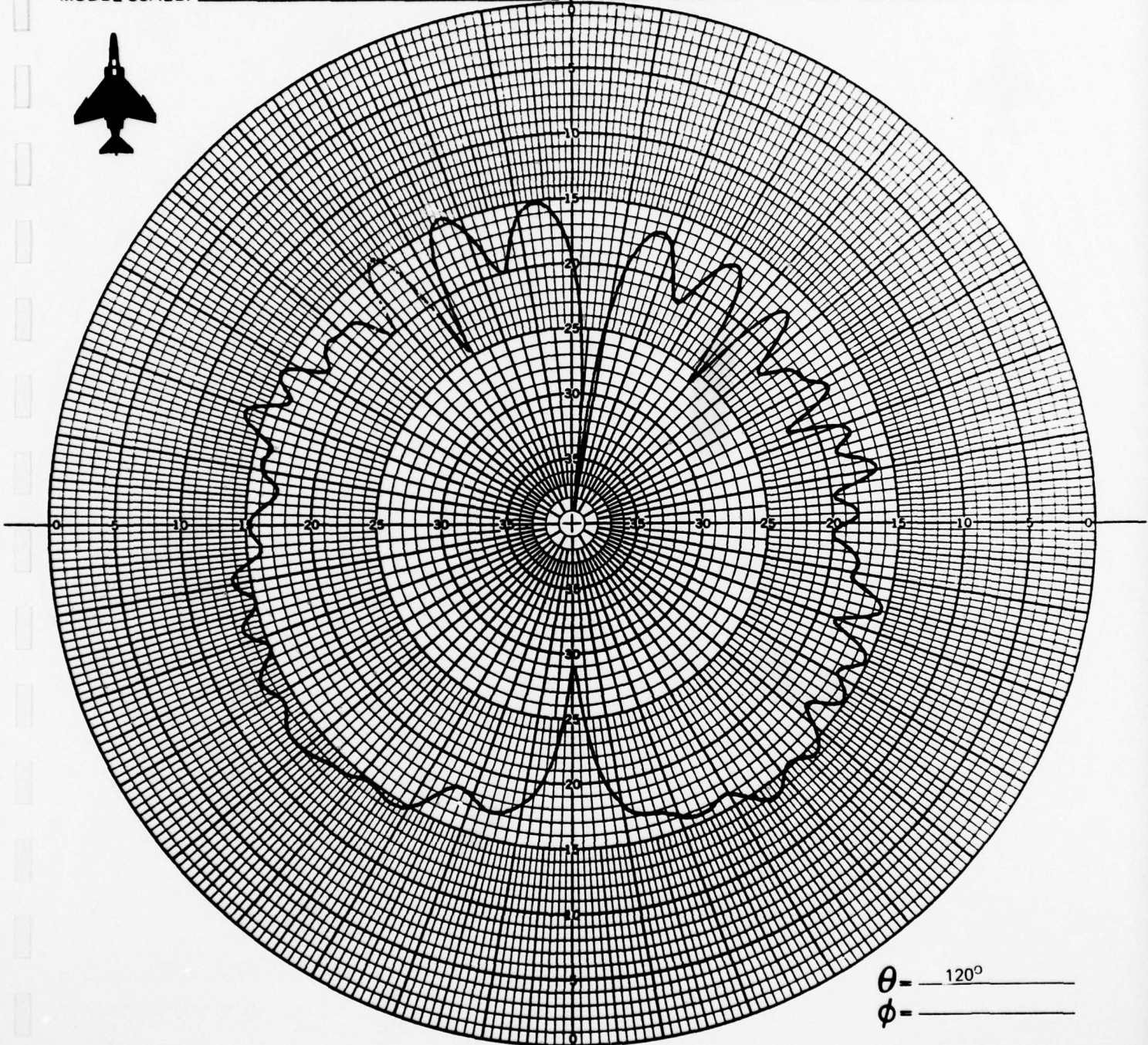
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 4-18-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 174 MHz
MODEL FREQUENCY: 870 MHz



θ = 120°
 ϕ = _____

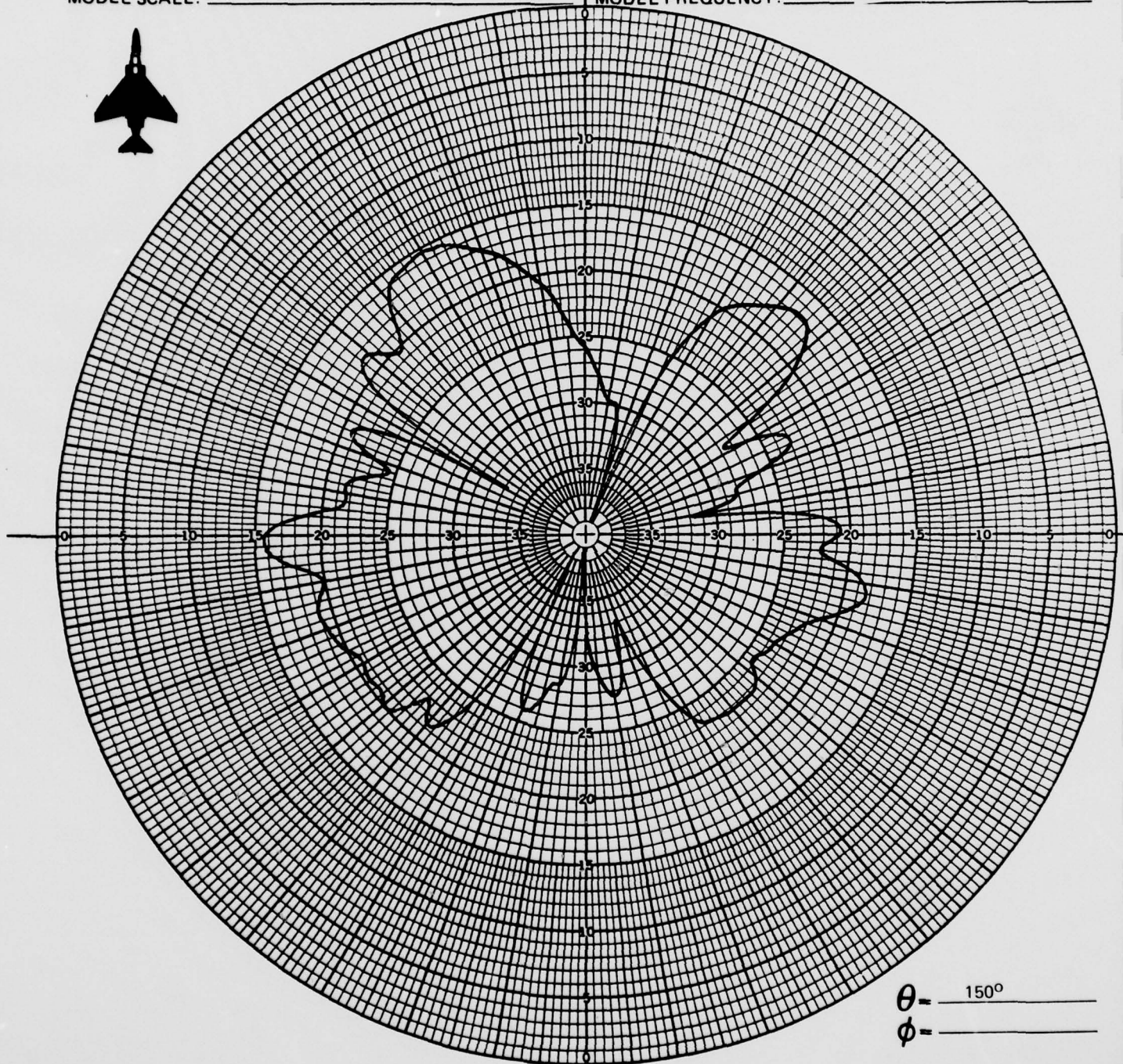
CONFIGURATION: 29
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: 285 FT
OBSERVER: PN, BM DATE: 4-18-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 174 MHz
MODEL FREQUENCY: _____ 870 MHz



θ - 150°
 ϕ - _____

CONFIGURATION: _____ 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

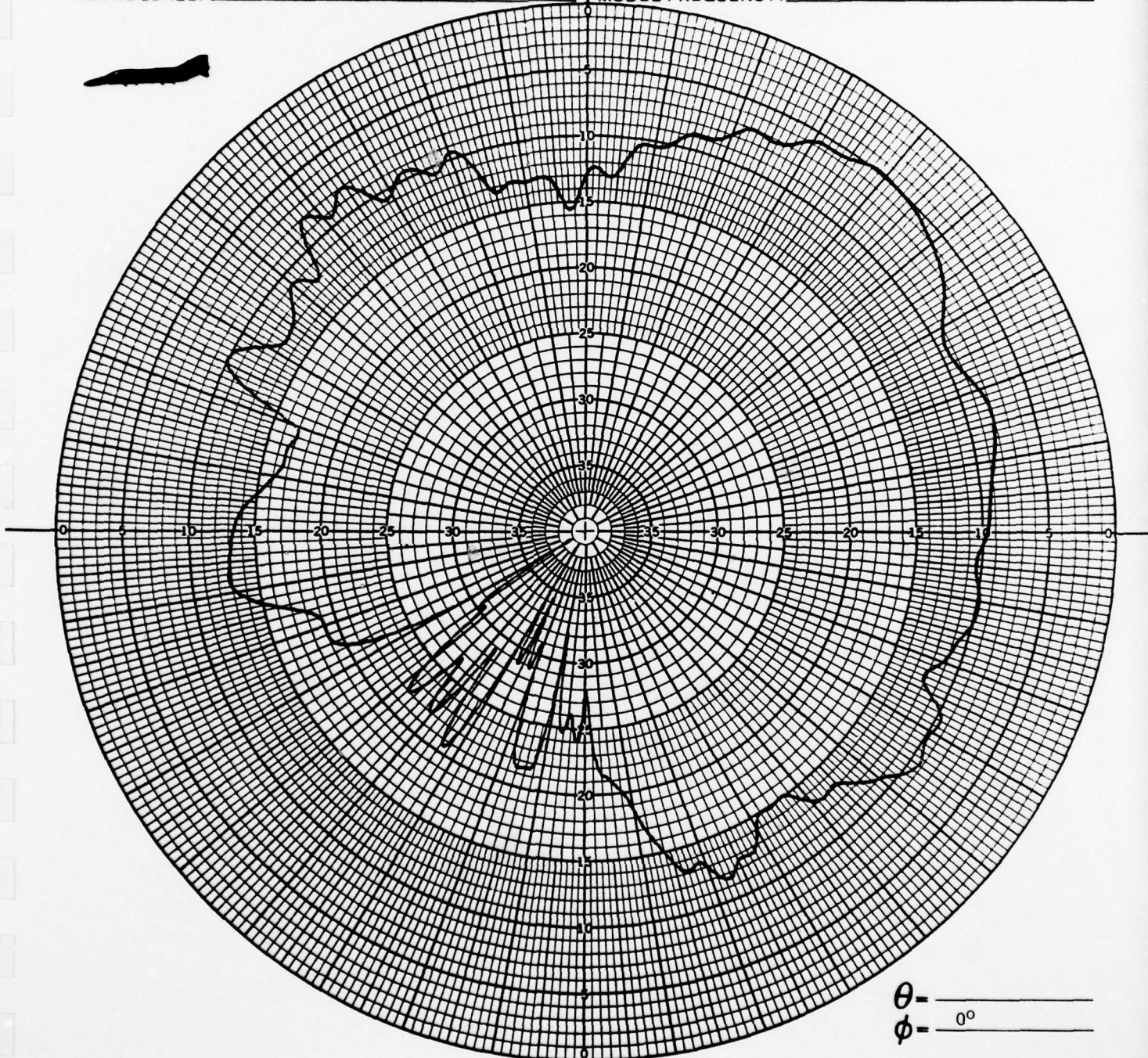
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: 4-18-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 225 MHz
MODEL FREQUENCY: 1125 MHz



θ - _____
 ϕ - 0°

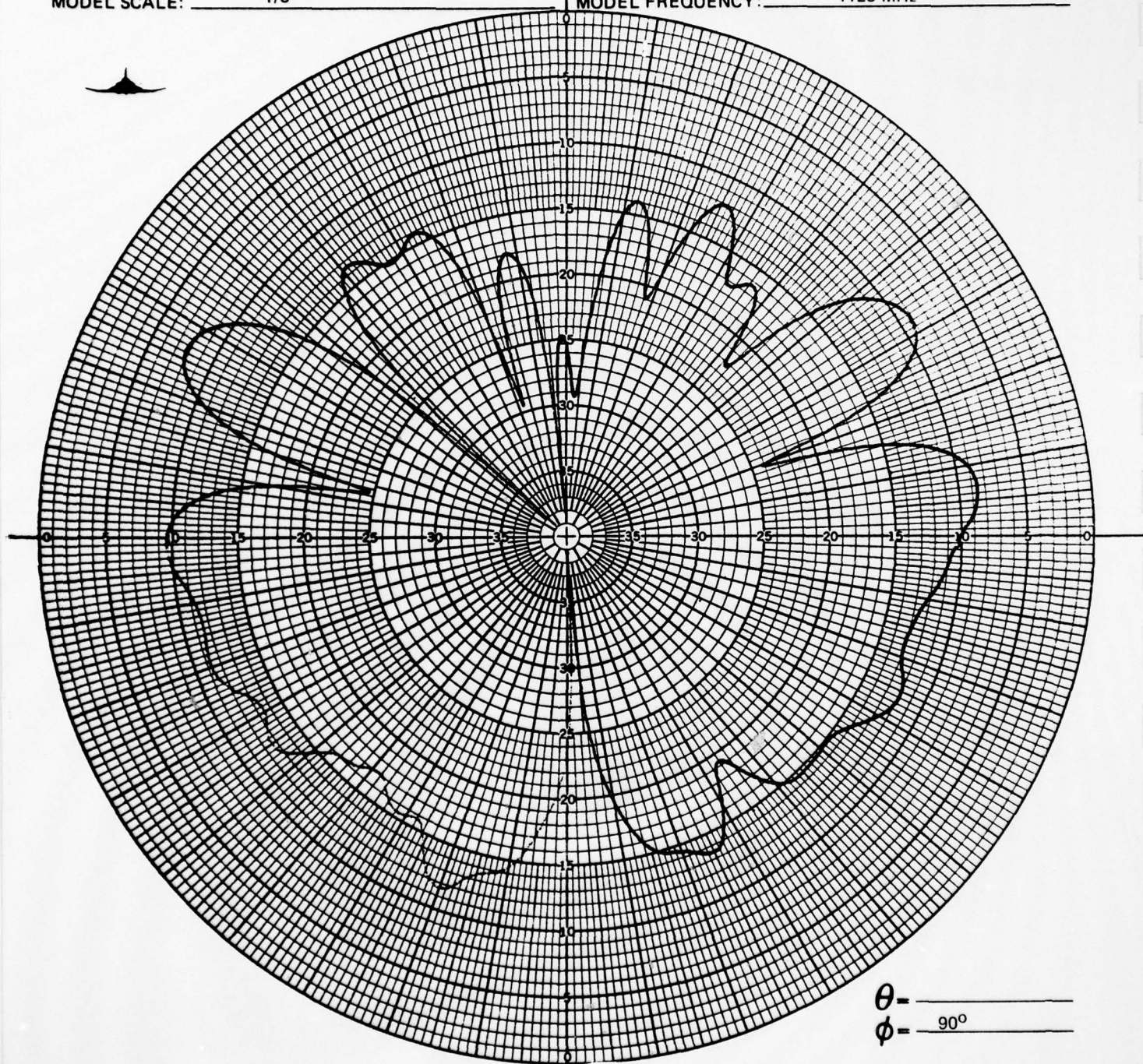
CONFIGURATION: 29
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: 285 FT
OBSERVER: PN, BM DATE: 4-18-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 225 MHz
MODEL FREQUENCY: _____ 1125 MHz



CONFIGURATION: _____ 29
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: 4-18-77

AD-A049 699

MCDONNELL AIRCRAFT CO ST LOUIS MO
MULTIBAND ANTENNA SYSTEM FOR TACTICAL AIRCRAFT.(U)
SEP 77 F W VORTMEIER

F/G 17/2.1

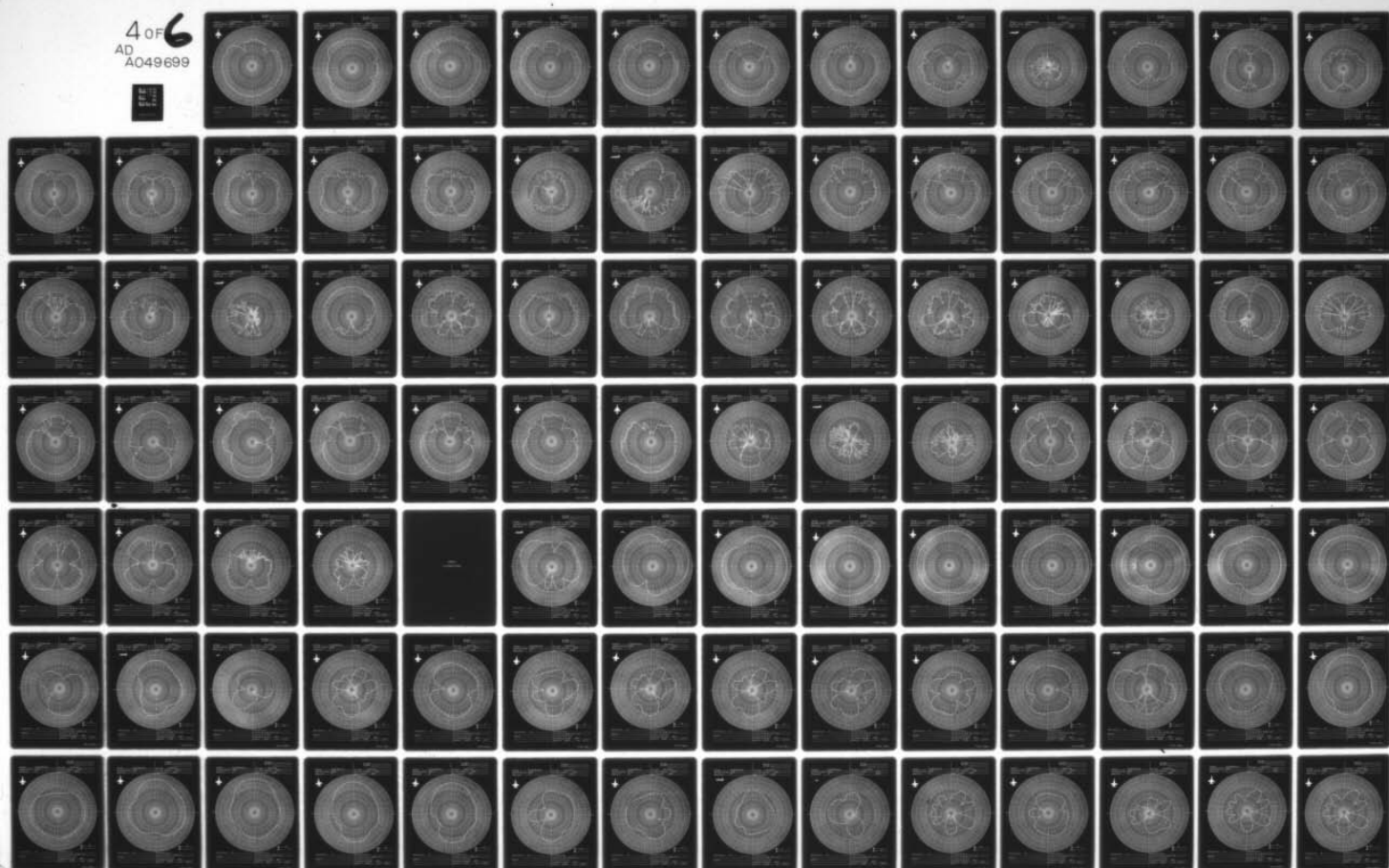
N62269-77-C-0138

UNCLASSIFIED

NADC-76240-20

NL

4 of 6
AD
A049 699



DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE

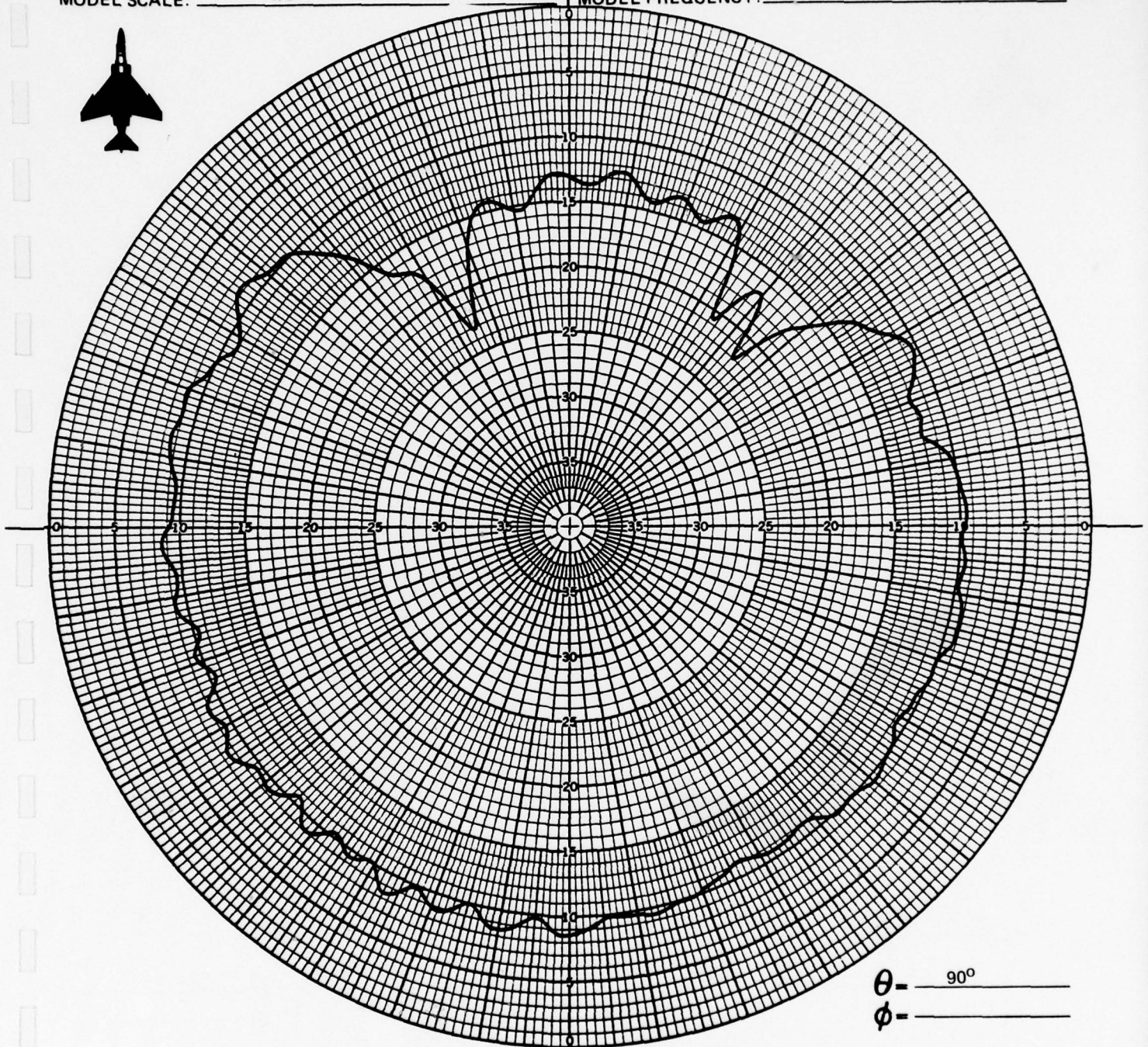
ANTENNA LOCATION: _____ FINCAP

MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)

FULL SCALE FREQUENCY: _____ 225 MHz

MODEL FREQUENCY: _____ 1125 MHz



θ - 90°
 ϕ - _____

CONFIGURATION: _____ 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

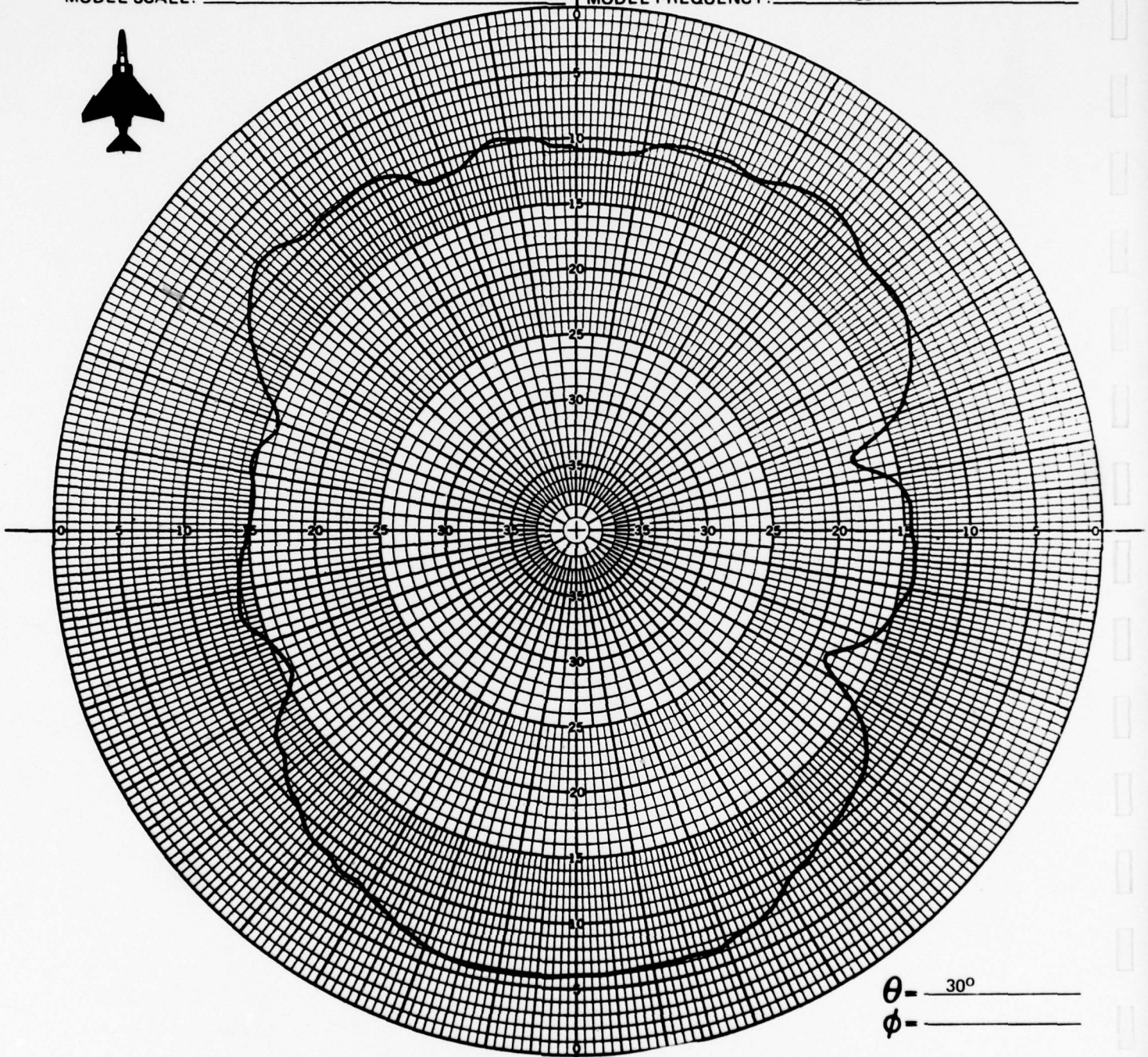
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: 4-18-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 225 MHz
MODEL FREQUENCY: _____ 1125 MHz



θ - 30°
 ϕ - _____

CONFIGURATION: _____ 29
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: E ☒ ϕ ☐ E θ ☒ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: 4-18-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE

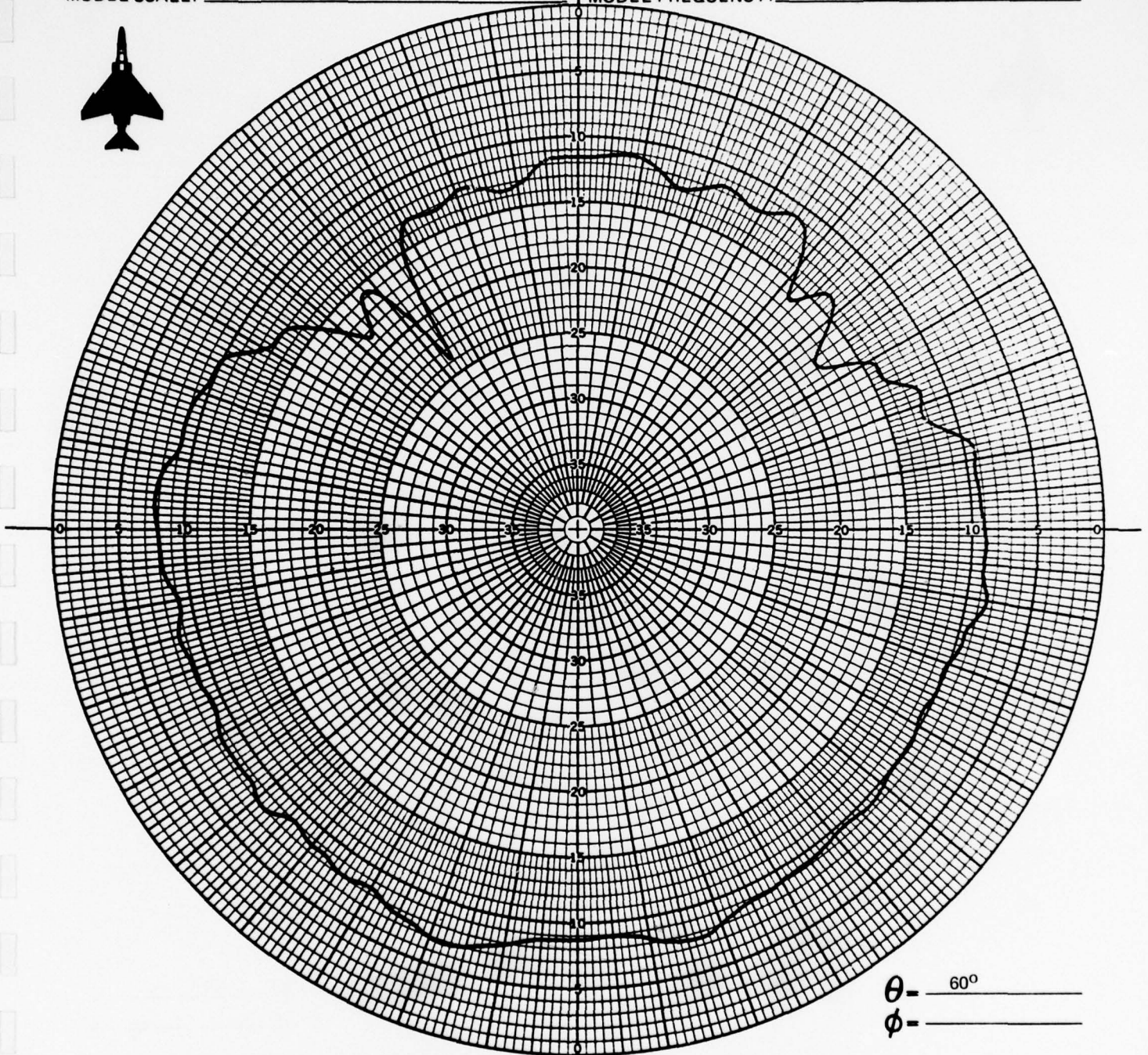
ANTENNA LOCATION: _____ FINCAP

MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)

FULL SCALE FREQUENCY: _____ 225 MHz

MODEL FREQUENCY: _____ 1125 MHz



θ - 60°
 ϕ - _____

CONFIGURATION: _____ 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: ☒ E ϕ ☐ E θ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

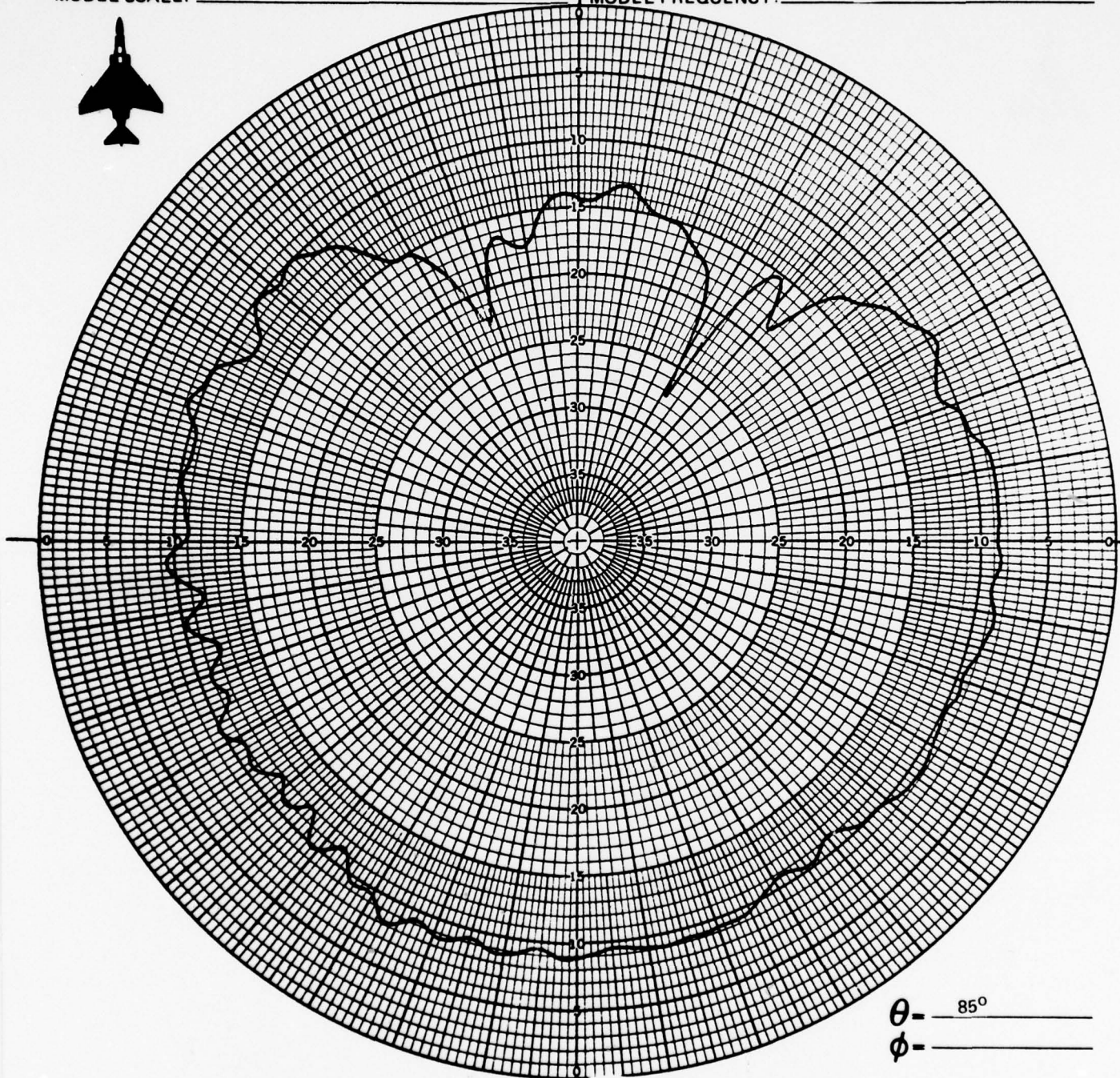
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: 4-18-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 225 MHz
MODEL FREQUENCY: _____ 1125 MHz



θ - 85°
 ϕ - _____

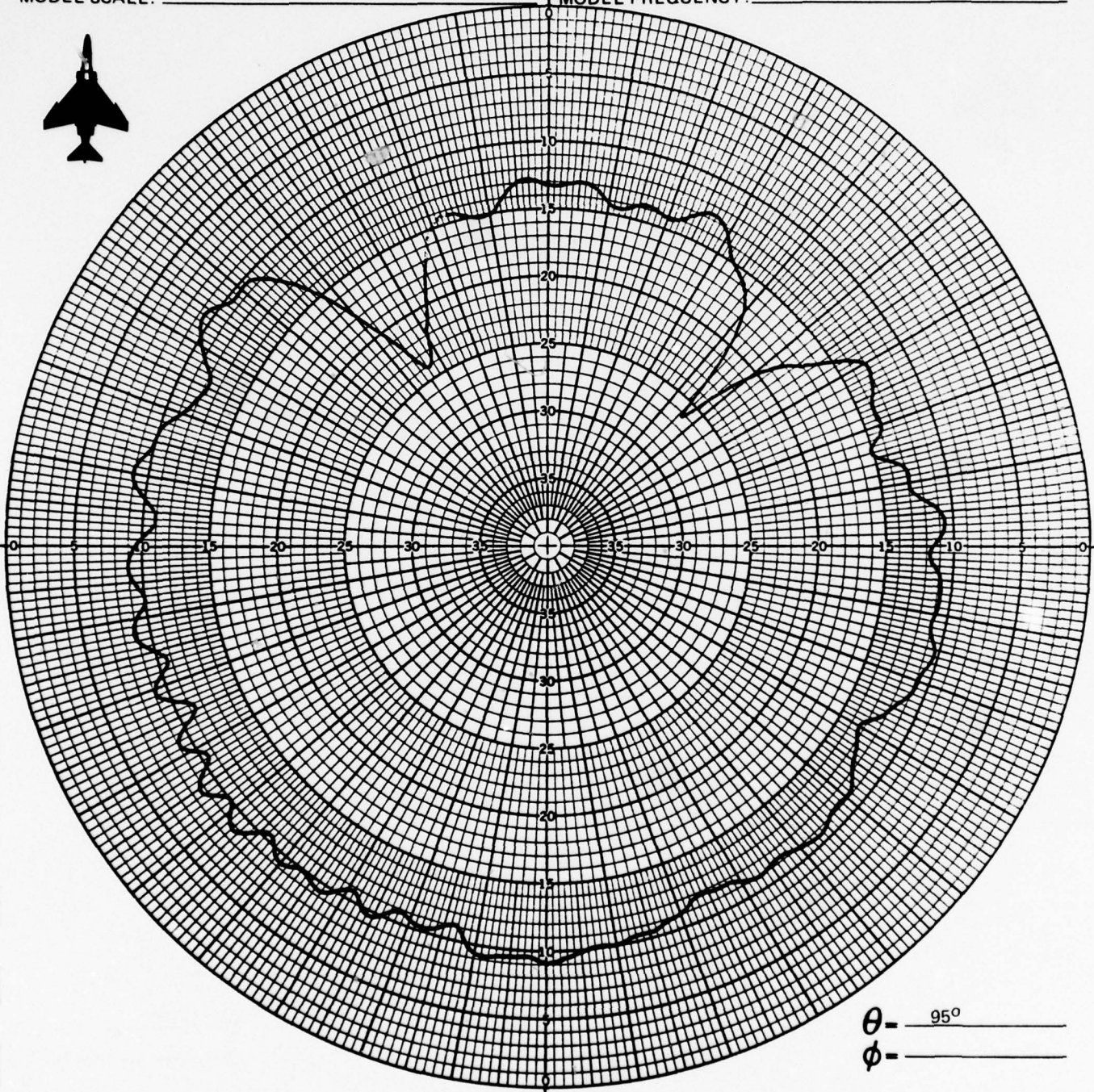
CONFIGURATION: _____ 29
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: E ϕ ☐ E θ ☒ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: 4-18-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 225 MHz
MODEL FREQUENCY: _____ 1125 MHz



θ - 95°
 ϕ - _____

CONFIGURATION: _____ 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: 4-18-77

ANTENNA: FLYING PROTOTYPE

ANTENNA LOCATION: FINCAP

MODEL SCALE: 1/5

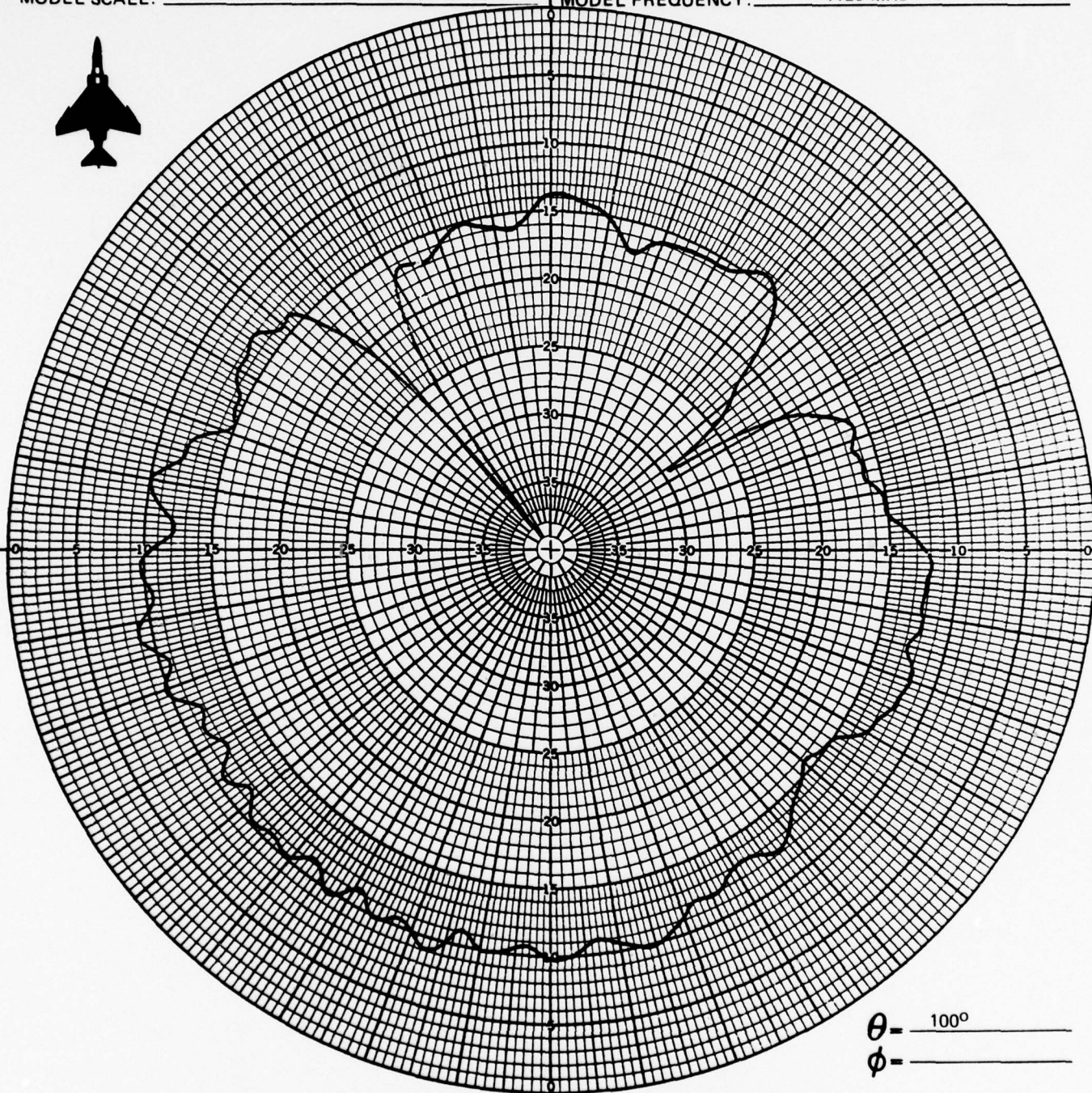
DOCUMENT _____

REVISION _____

TEST IDENT.: 703-174 (F-4)

FULL SCALE FREQUENCY: 225 MHz

MODEL FREQUENCY: 1125 MHz



θ = 100°

ϕ = _____

CONFIGURATION: 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: 285 FT

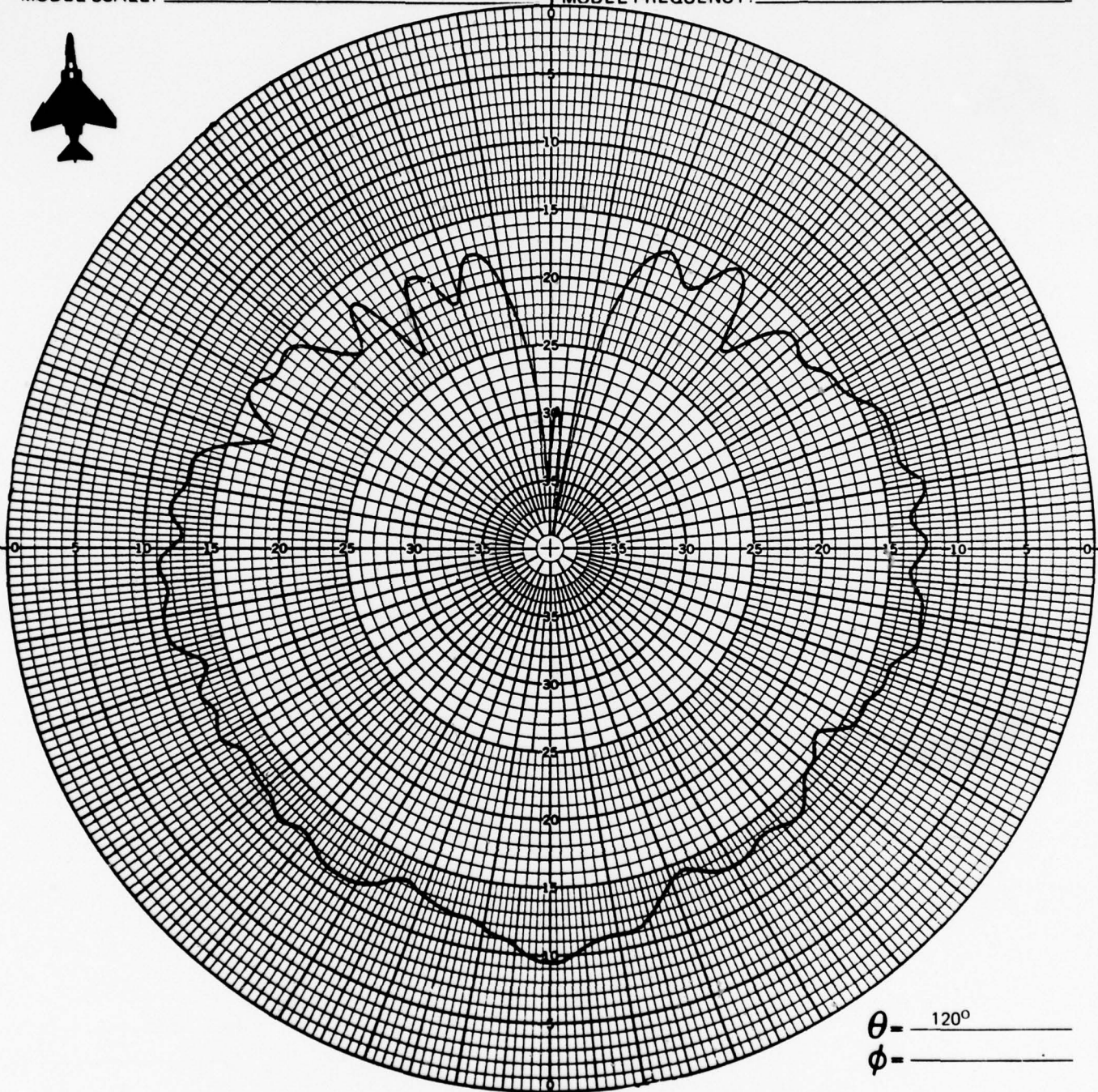
OBSERVER: PN, BM

DATE: 4-18-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 225 MHz
MODEL FREQUENCY: 1125 MHz



θ = 120°
 ϕ = _____

CONFIGURATION: 29
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: 285 FT
OBSERVER: PN, BM DATE: 4-18-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE

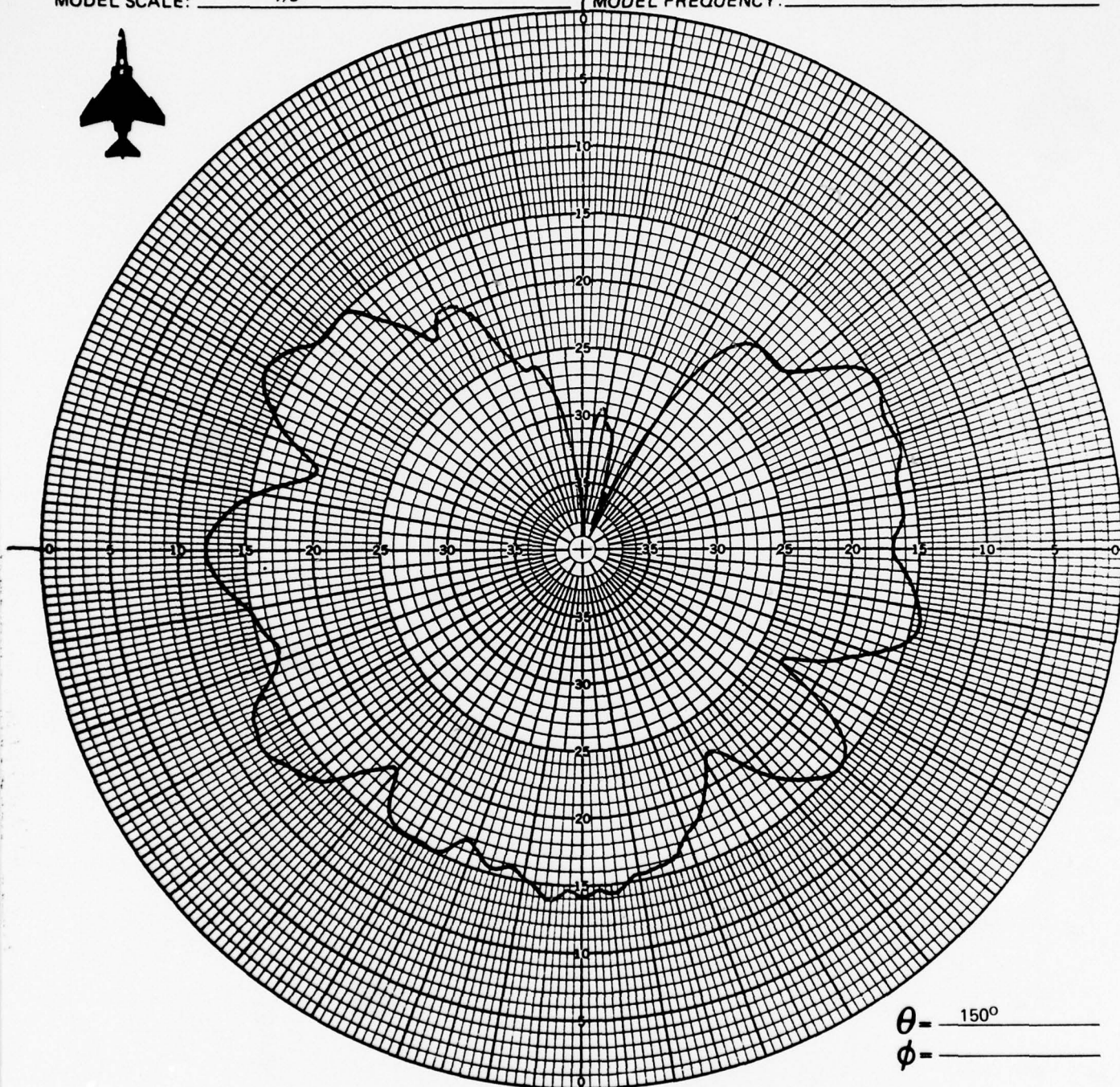
ANTENNA LOCATION: _____ FINCAP

MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)

FULL SCALE FREQUENCY: _____ 225 MHz

MODEL FREQUENCY: _____ 1125 MHz



θ = 150°
 ϕ = _____

CONFIGURATION: _____ 29

REMARKS: _____

INTEGRATOR COUNT: _____

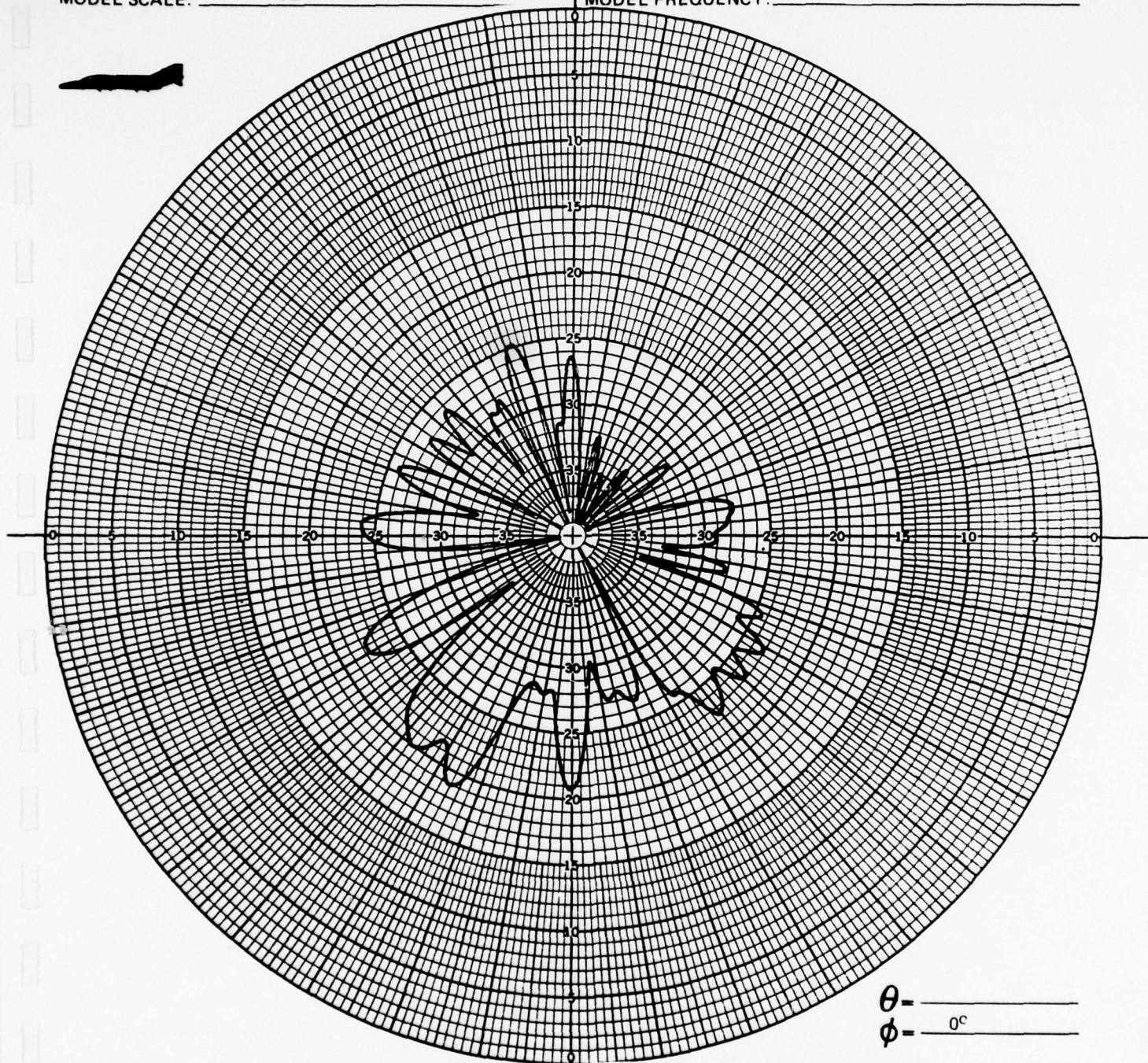
POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: 4-18-77

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 225 MHz
MODEL FREQUENCY: 1125 MHz


$$\theta = \underline{\hspace{2cm}}$$

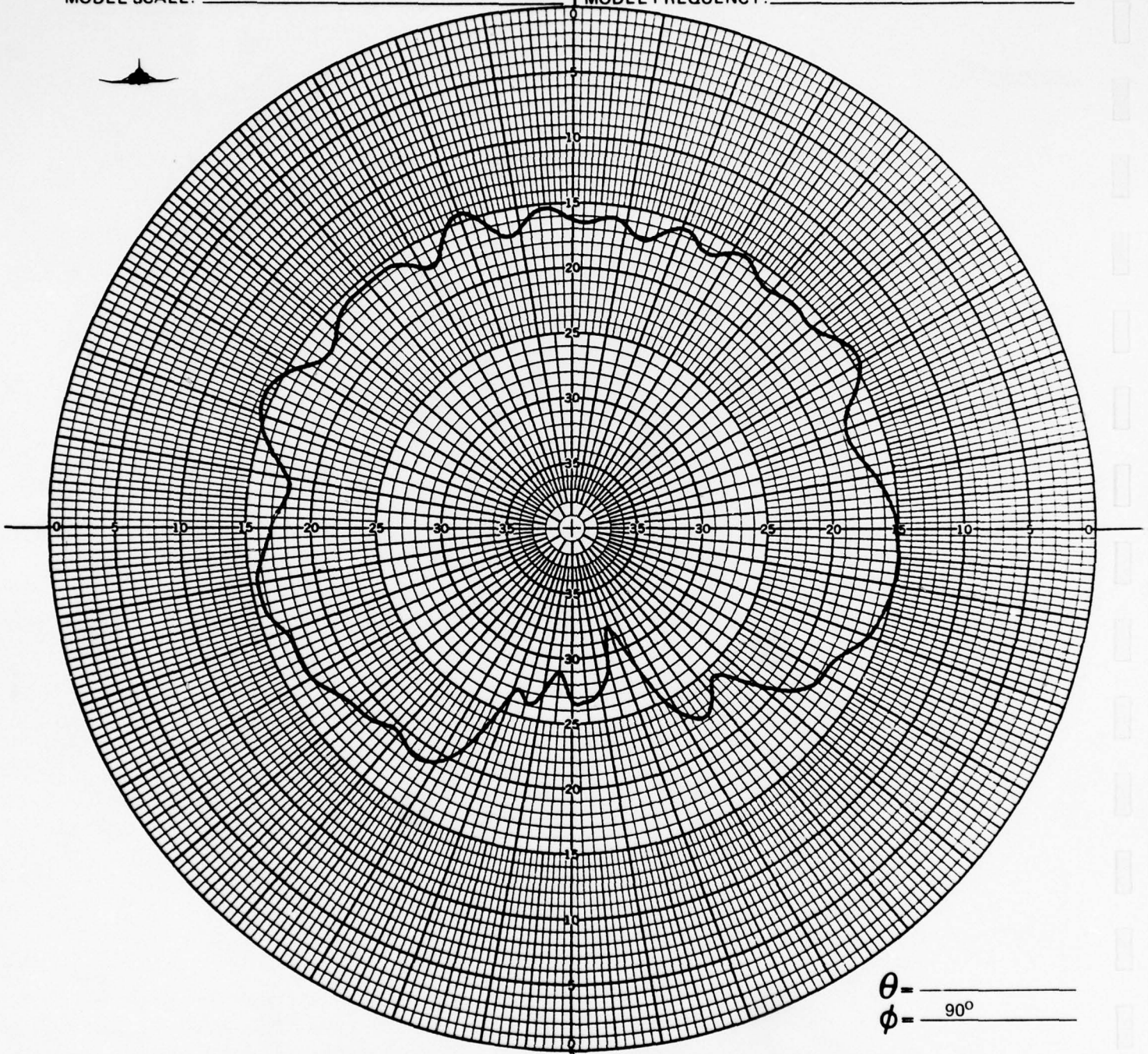
$$\phi = \underline{\hspace{2cm}}^{\circ}$$

INTEGRATOR COUNT: _____
POLARIZATION: E ϕ ☒ E θ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM _____ DATE: 4-15-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 225 MHz
MODEL FREQUENCY: _____ 1125 MHz



θ - _____
 ϕ - 90°

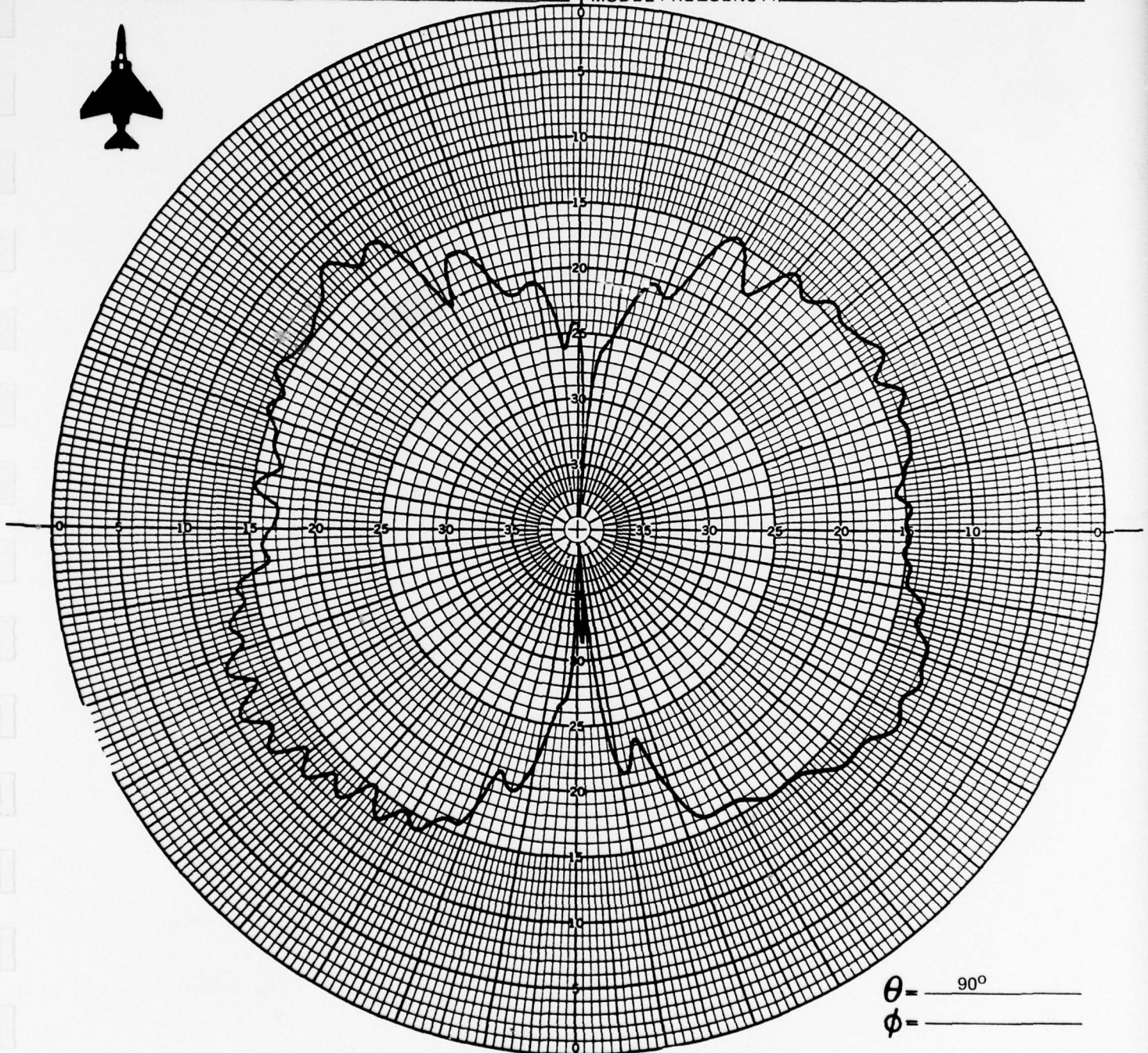
CONFIGURATION: _____ 29
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: 4-15-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 225 MHz
MODEL FREQUENCY: _____ 1125 MHz



θ = _____ 90°
 ϕ = _____

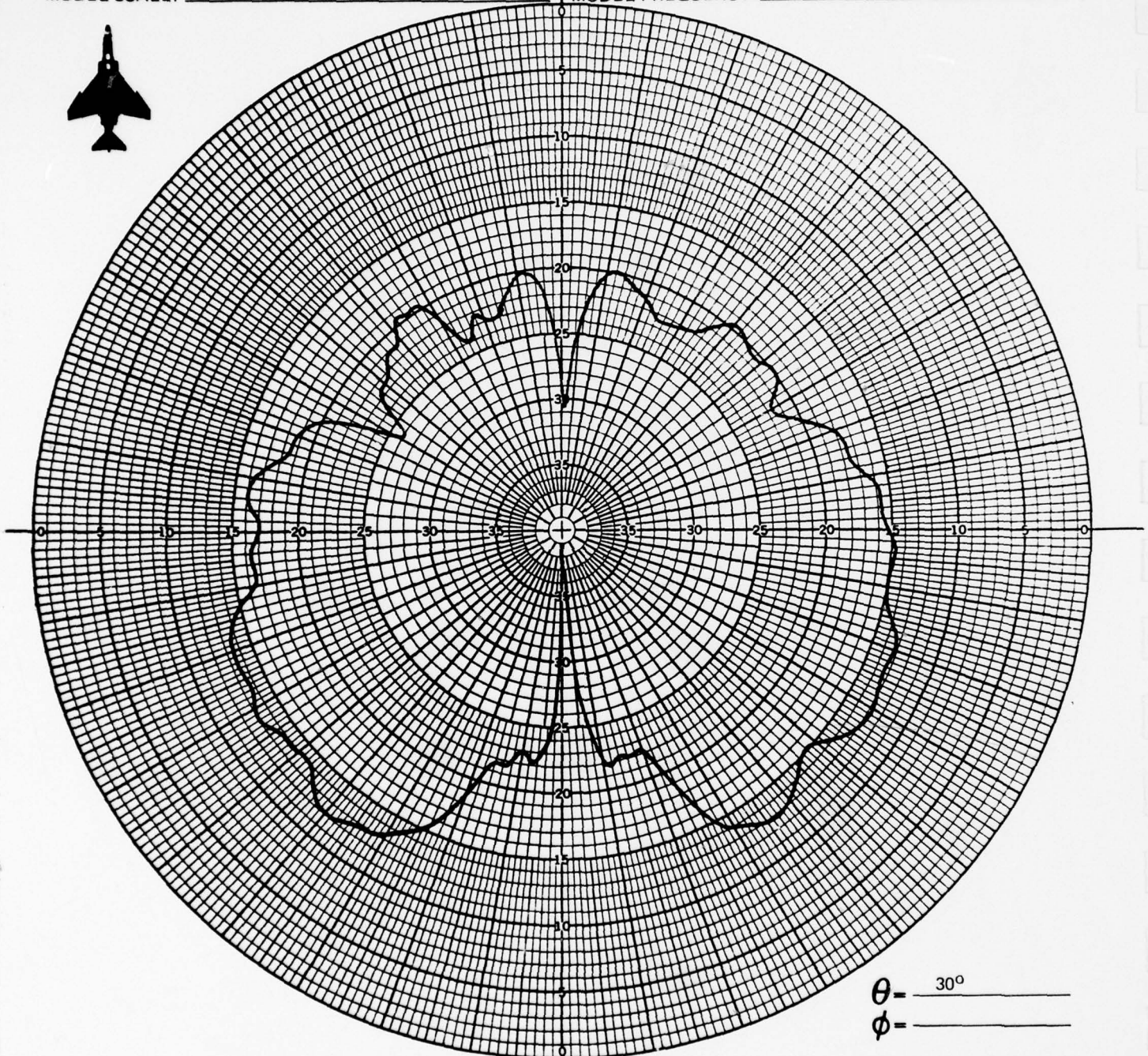
CONFIGURATION: _____ 29
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: _____ 4-15-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 225 MHz
MODEL FREQUENCY: _____ 1125 MHz



θ = 30°
 ϕ = _____

CONFIGURATION: _____ 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

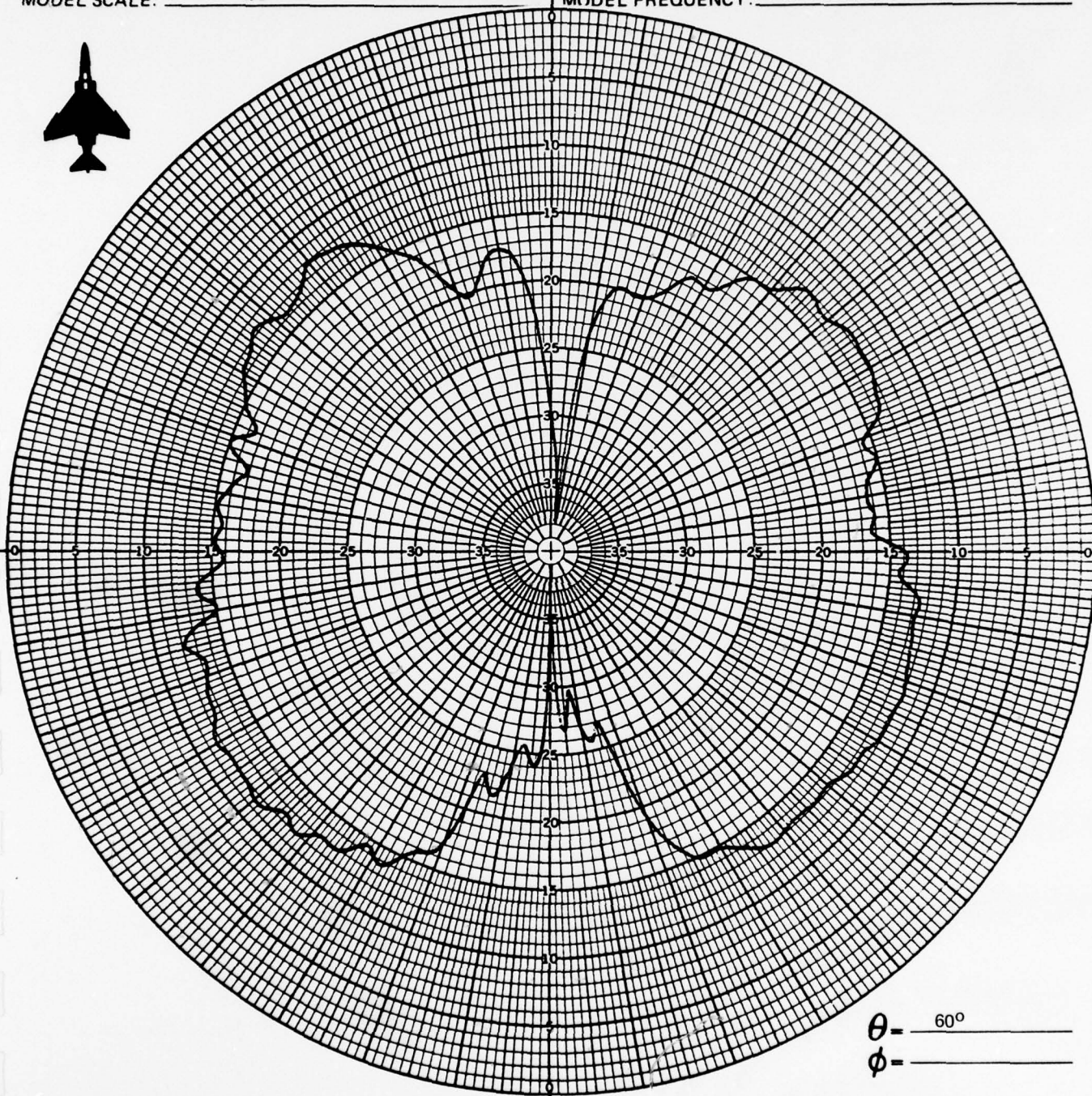
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: 4-15-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 225 MHz
MODEL FREQUENCY: _____ 1125 MHz



θ - 60°
 ϕ - _____

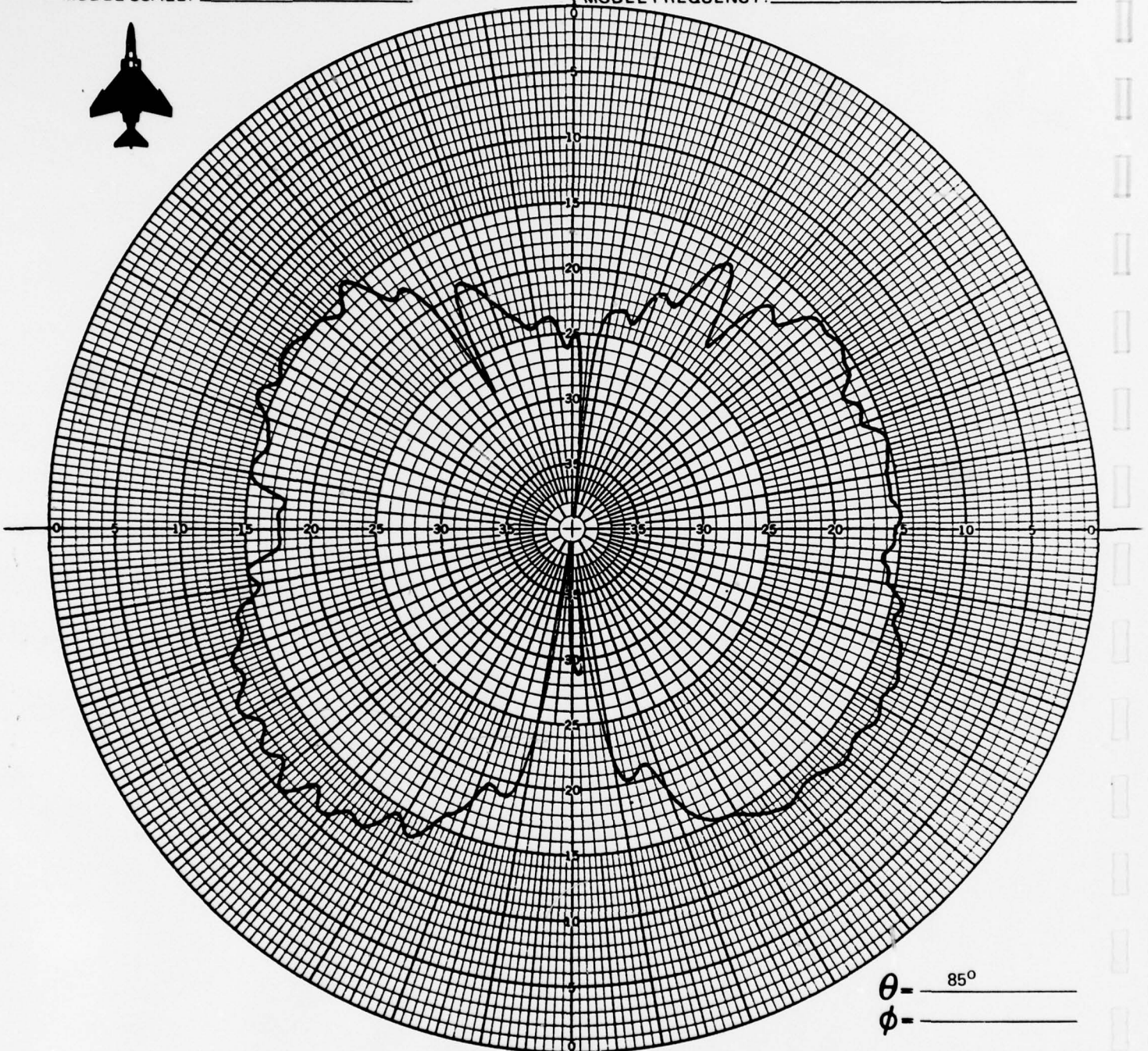
CONFIGURATION: _____ 29
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: 4-19-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 225 MHz
MODEL FREQUENCY: _____ 1125 MHz



θ - 85°
 ϕ - _____

CONFIGURATION: _____ 20

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

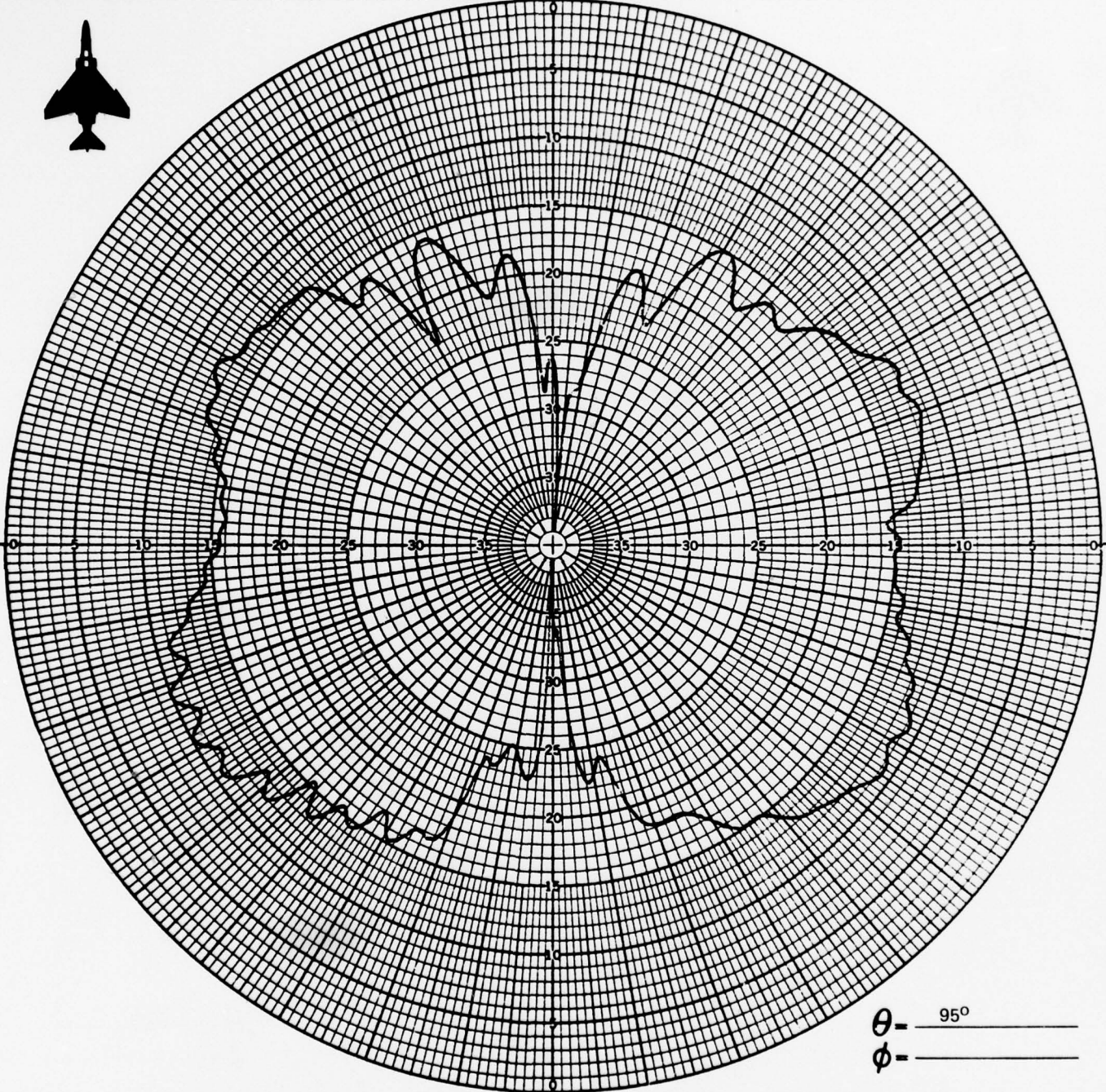
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: 4-15-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 225 MHz
MODEL FREQUENCY: _____ 1125 MHz



θ - 95°
 ϕ - _____

CONFIGURATION: _____ 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

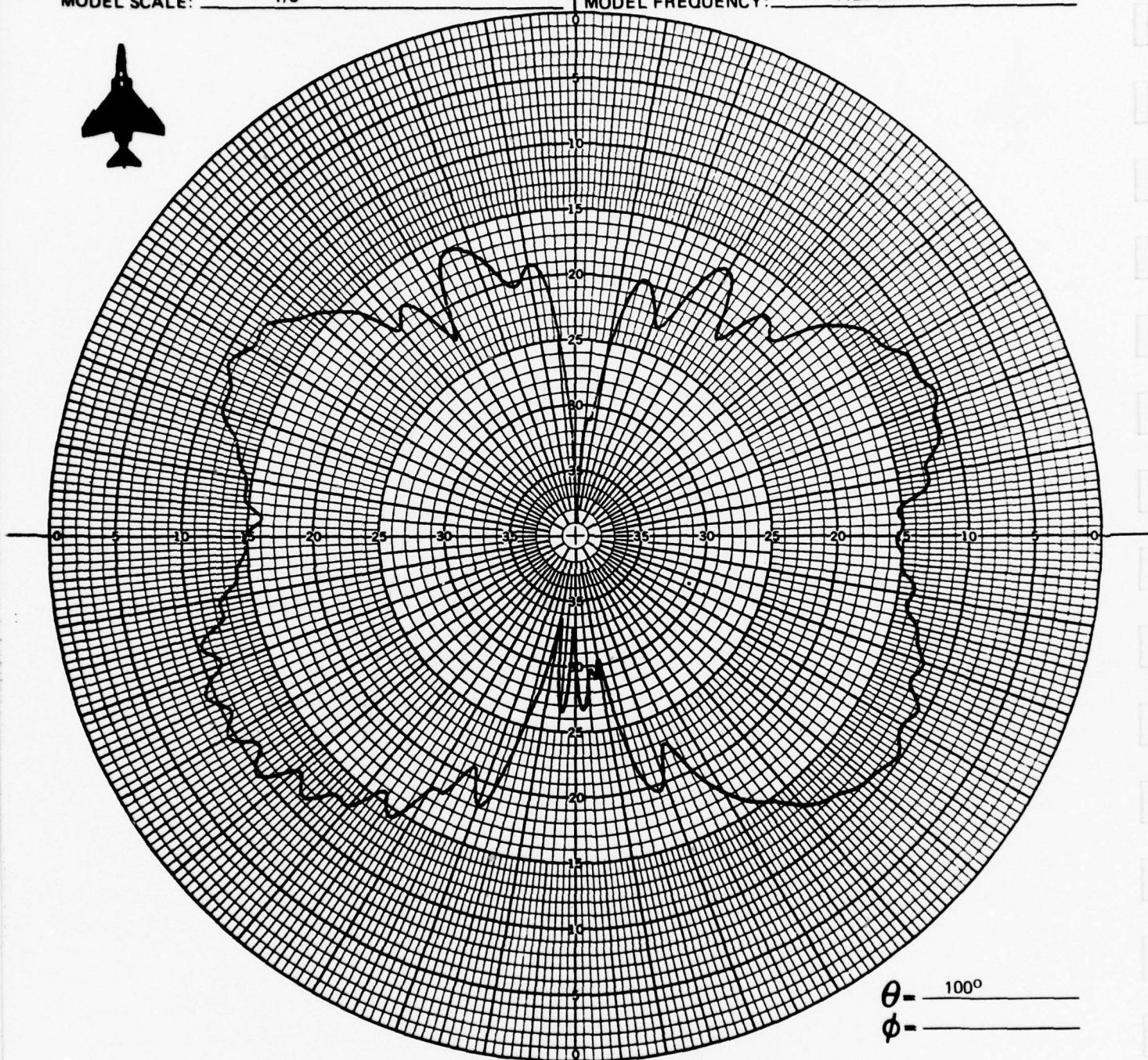
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: 4-15-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 225 MHz
MODEL FREQUENCY: 1125 MHz



θ - 100°
 ϕ - _____

CONFIGURATION: 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: E ☒ ϕ ☐ E θ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

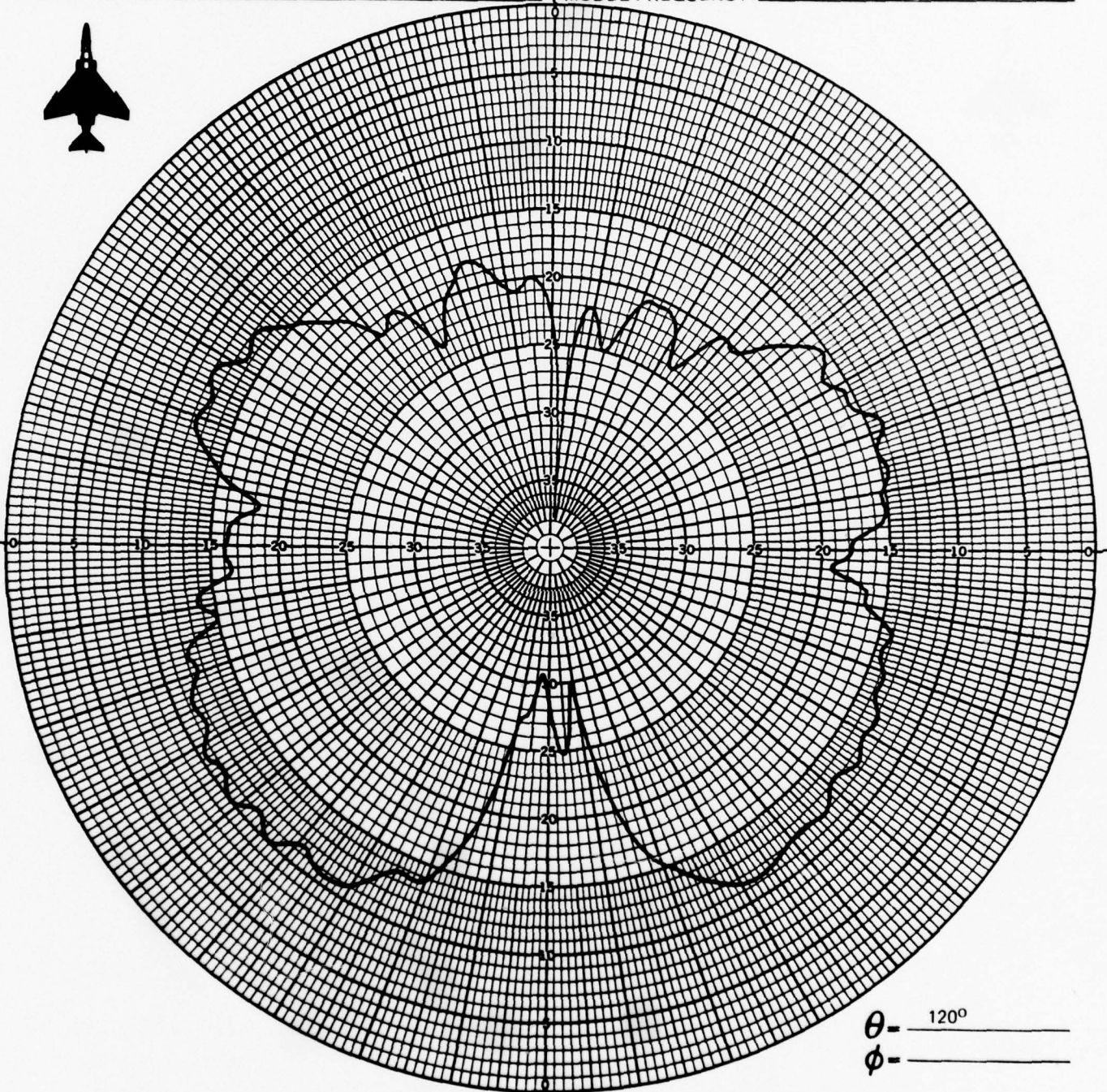
TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 4-15-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 225 MHz
MODEL FREQUENCY: _____ 1125 MHz



θ - 120°
 ϕ - _____

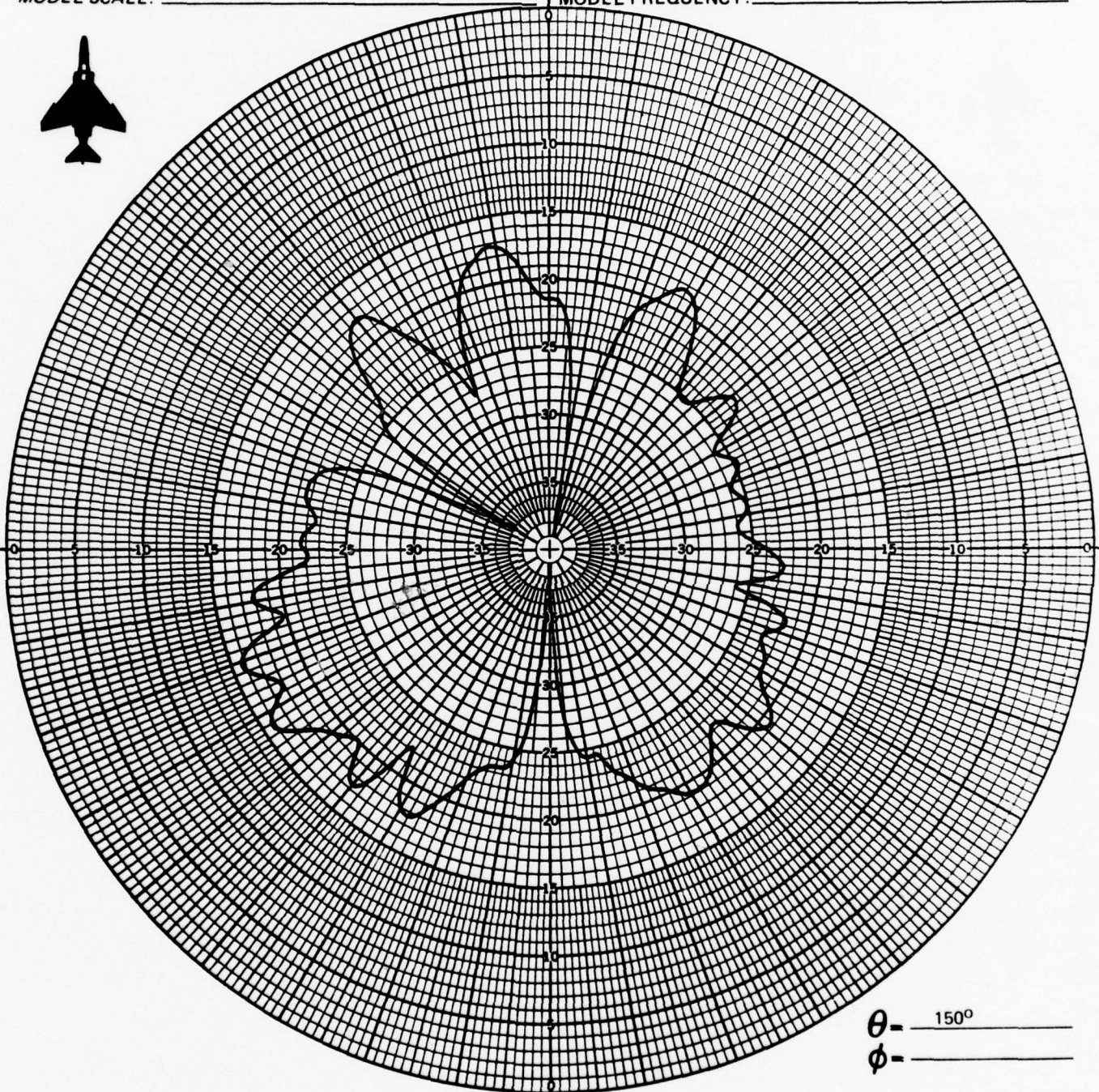
CONFIGURATION: _____ 29
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: 4-15-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 225 MHz
MODEL FREQUENCY: 1125 MHz



θ - 150°
 ϕ - _____

CONFIGURATION: 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

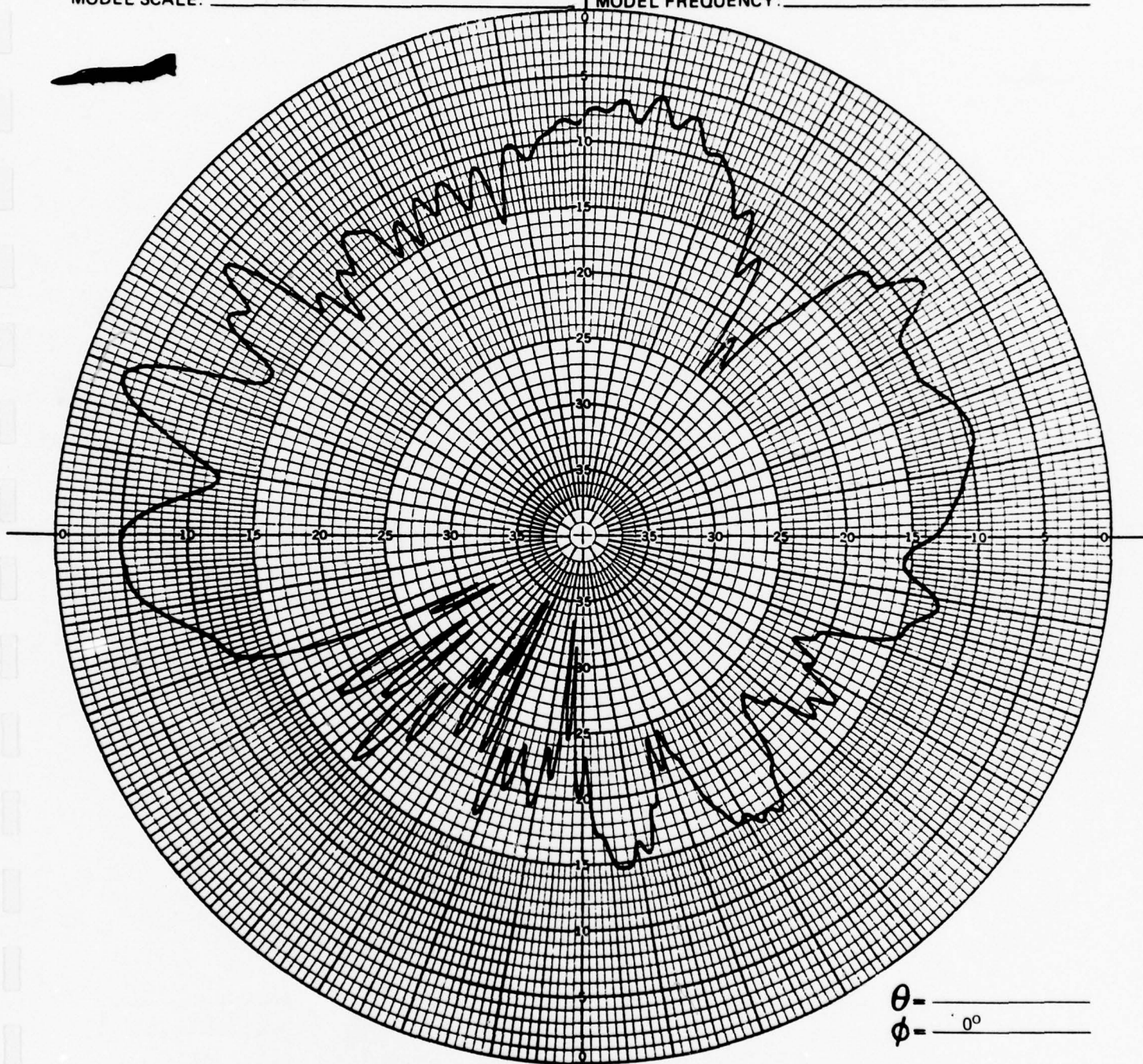
TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 4-15-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 325 MHz
MODEL FREQUENCY: _____ 1625 MHz



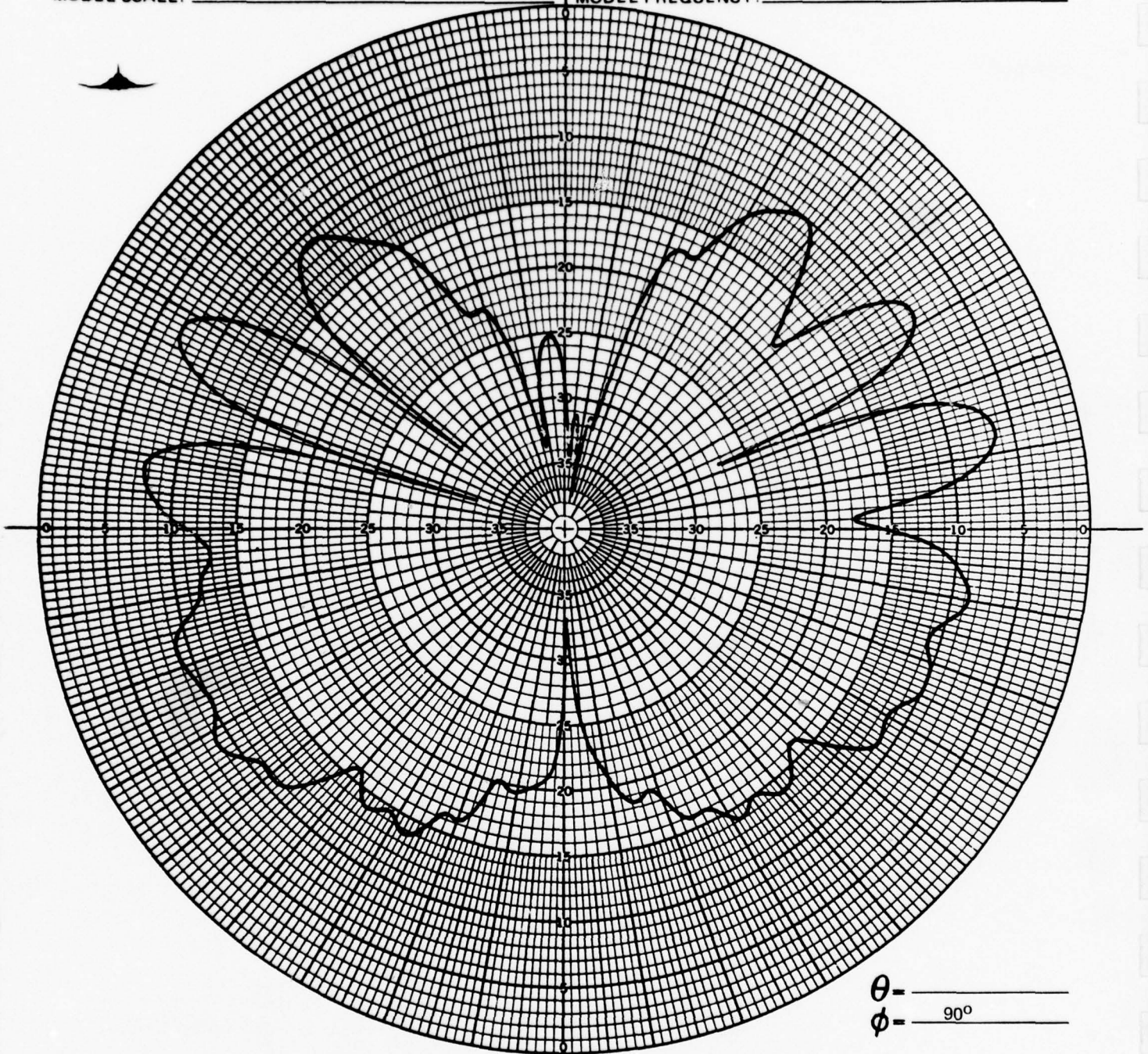
CONFIGURATION: _____ 29
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: _____ 4-19-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 325 MHz
MODEL FREQUENCY: 1625 MHz



CONFIGURATION: 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

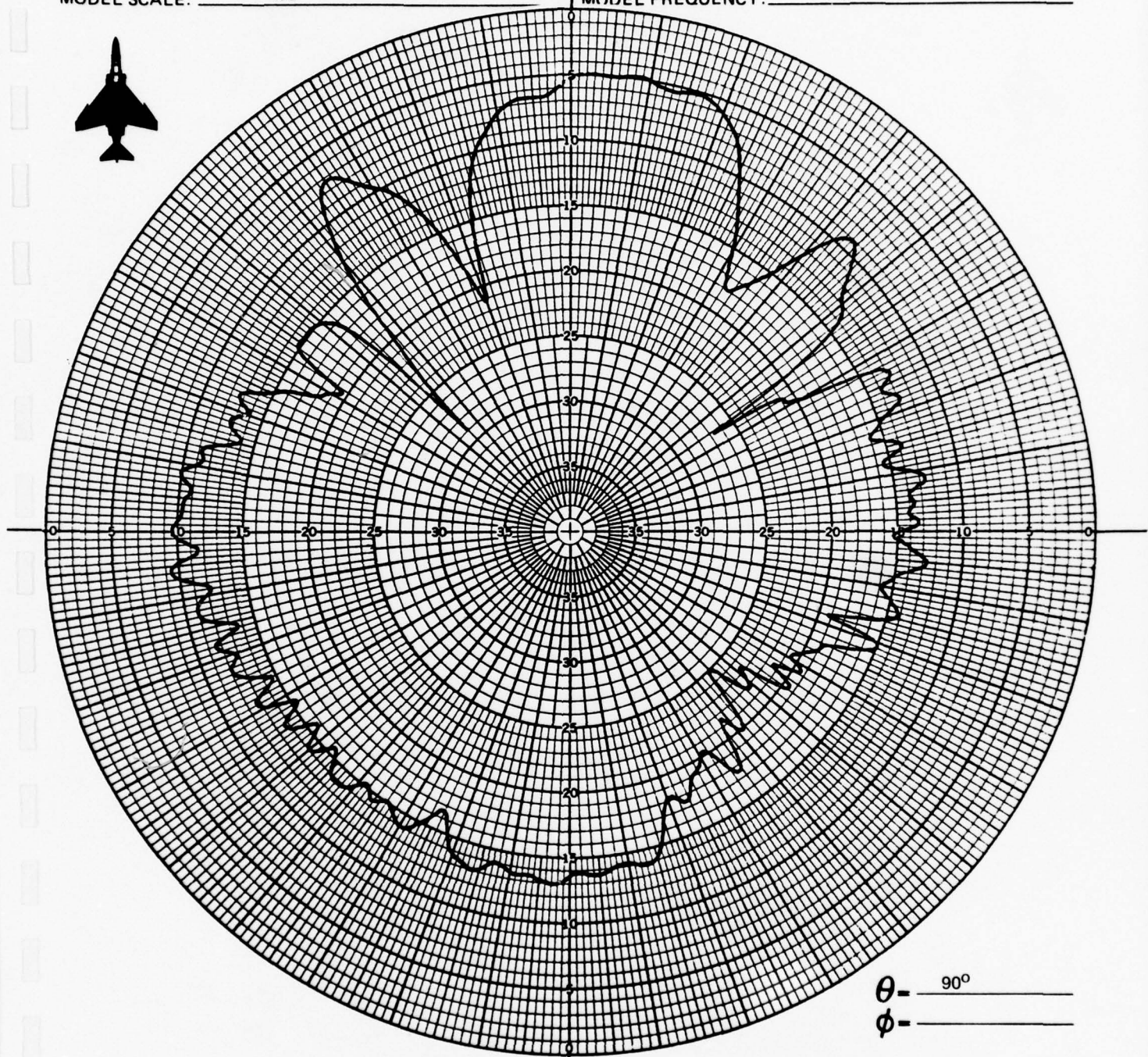
TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 4-19-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 325 MHz
MODEL FREQUENCY: _____ 1625 MHz



θ - 90°
 ϕ - _____

CONFIGURATION: _____ 29
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: E ☒ ϕ ☐ E θ ☒ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: _____ 4-19-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE

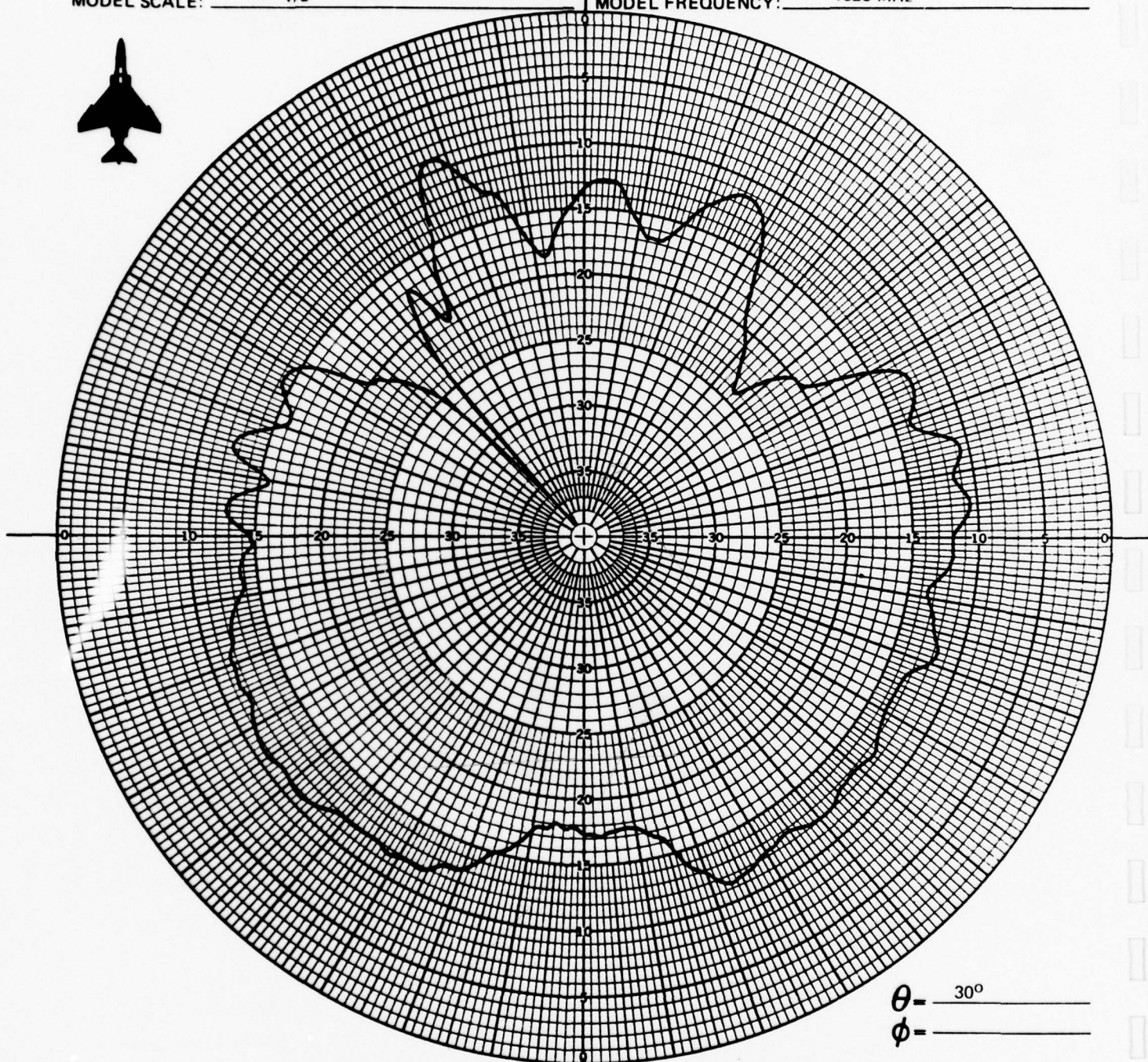
ANTENNA LOCATION: _____ FINCAP

MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)

FULL SCALE FREQUENCY: _____ 325 MHz

MODEL FREQUENCY: _____ 1625 MHz



θ - 30°
 ϕ - _____

CONFIGURATION: _____ 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

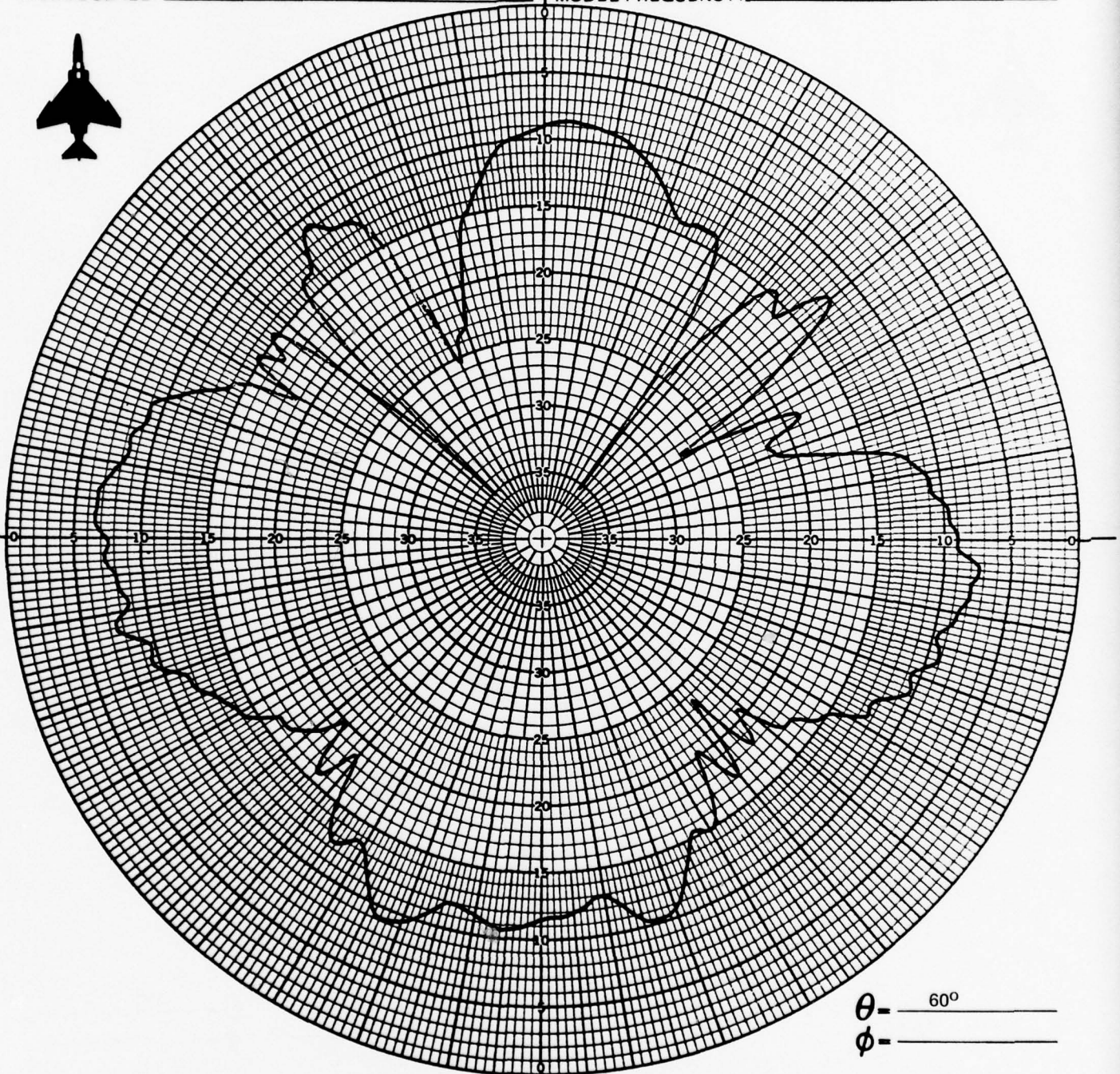
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: 4-19-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 325 MHz
MODEL FREQUENCY: _____ 1625 MHz



θ - 60°
 ϕ -

CONFIGURATION: _____ 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

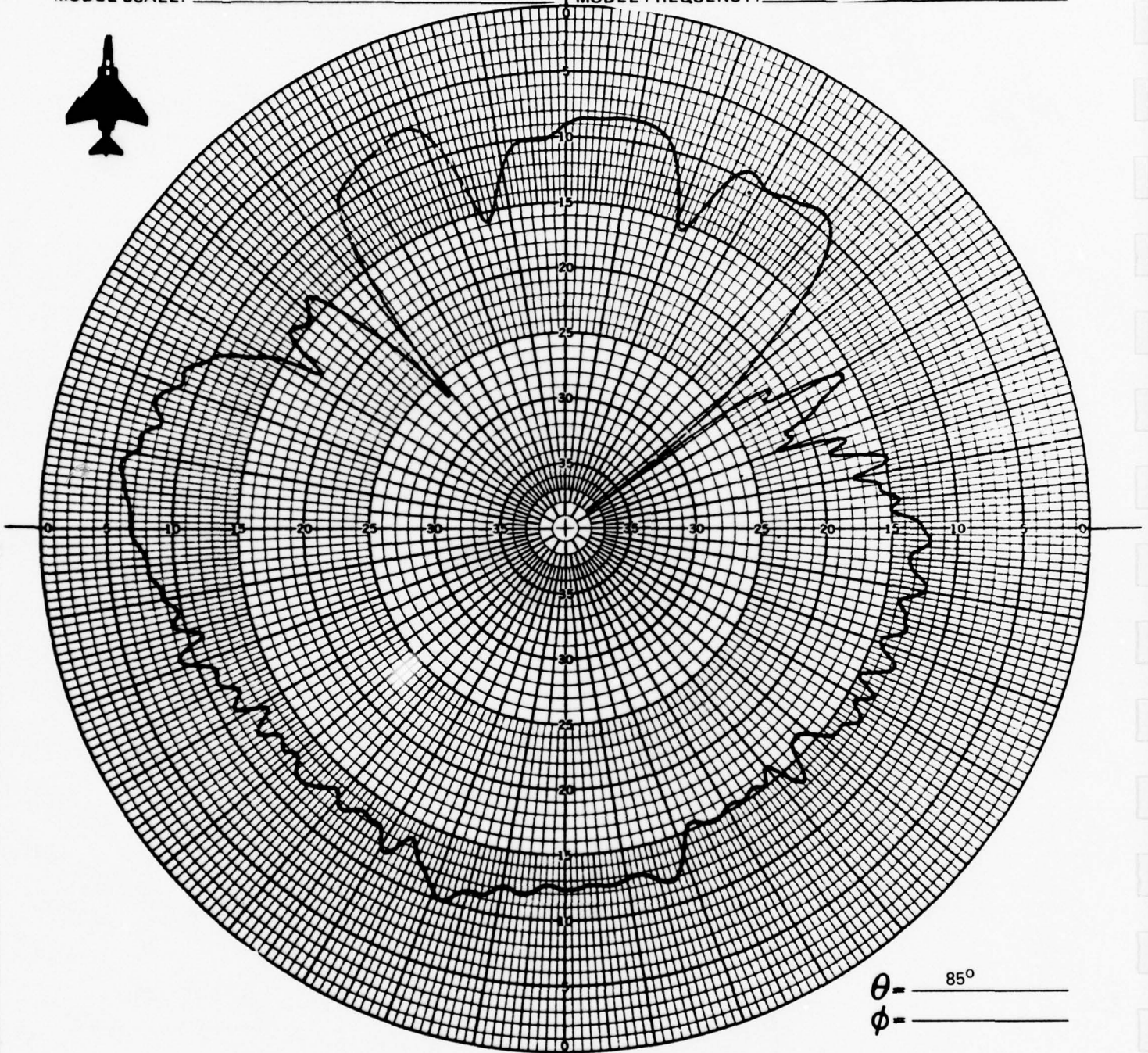
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM _____ DATE: 4-19-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 325 MHz
MODEL FREQUENCY: _____ 1625 MHz



θ = 85°
 ϕ = _____

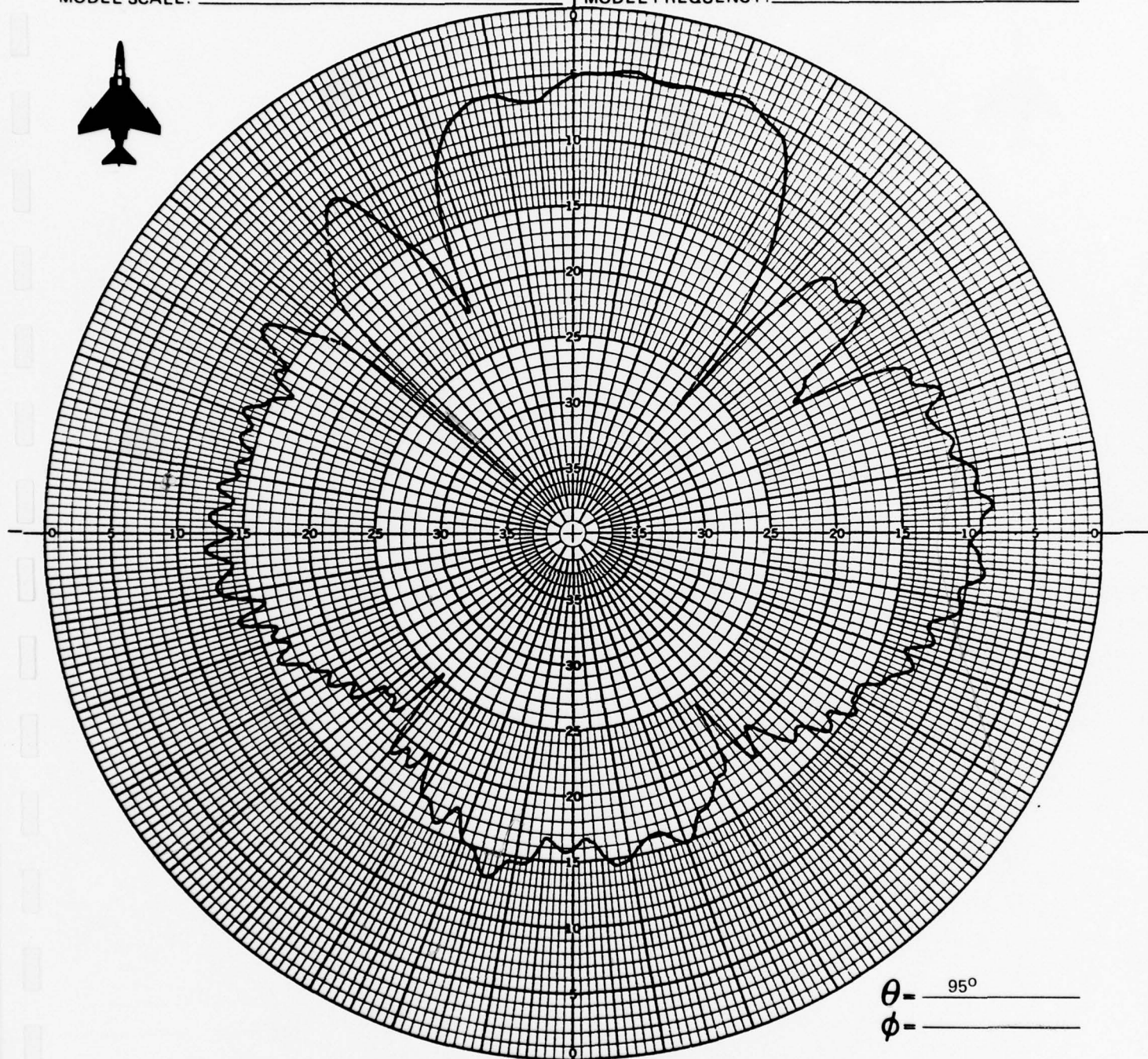
CONFIGURATION: _____ 29
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: E ϕ ☐ E θ ☒ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM _____ DATE: _____

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 325 MHz
MODEL FREQUENCY: _____ 1625 MHz



θ - 95°
 ϕ - _____

CONFIGURATION: _____ 29
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: 4-19-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE

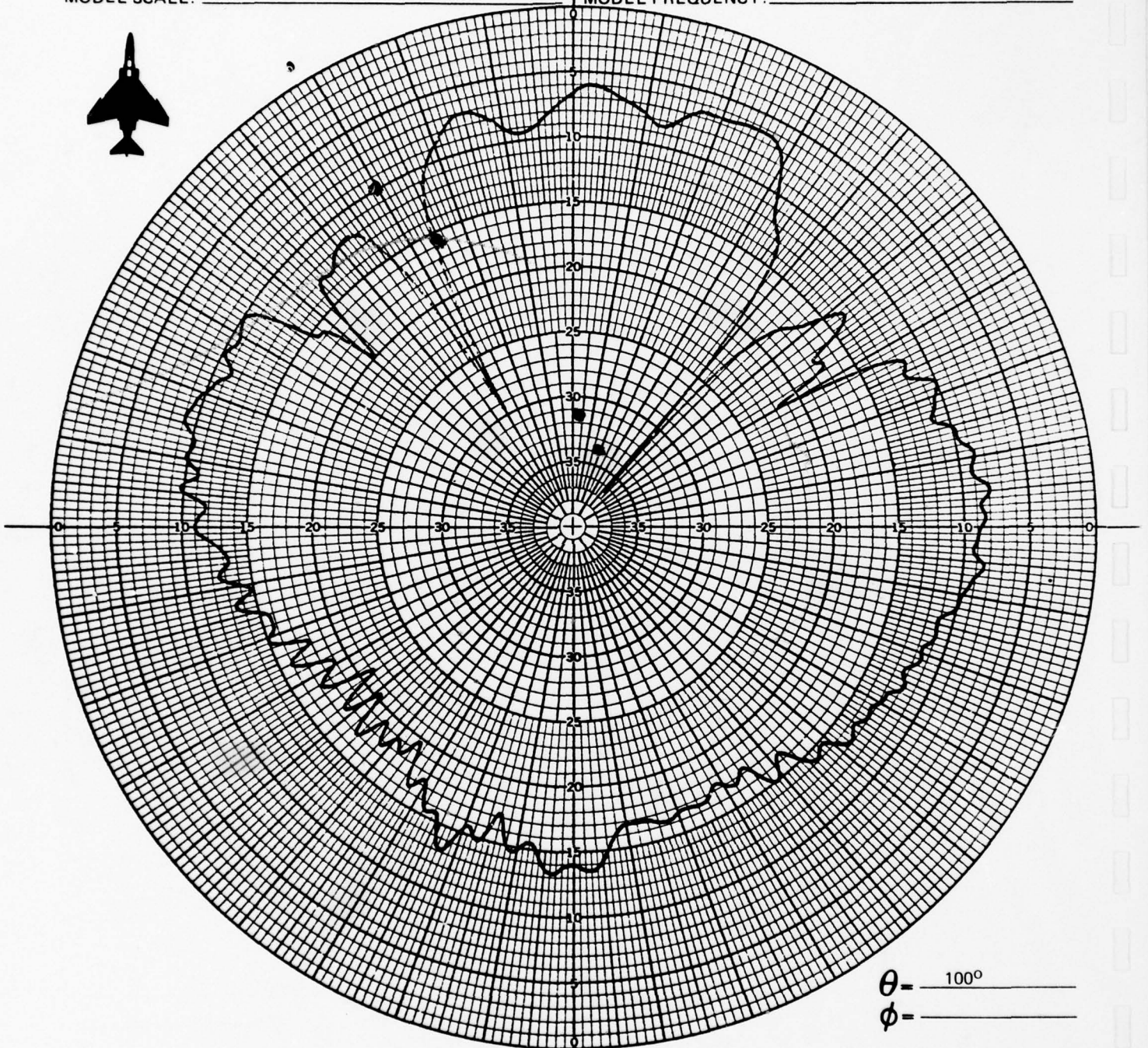
ANTENNA LOCATION: _____ FINCAP

MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)

FULL SCALE FREQUENCY: _____ 325 MHz

MODEL FREQUENCY: _____ 1625 MHz



θ = 100°
 ϕ = _____

CONFIGURATION: _____ 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM _____ DATE: _____

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE

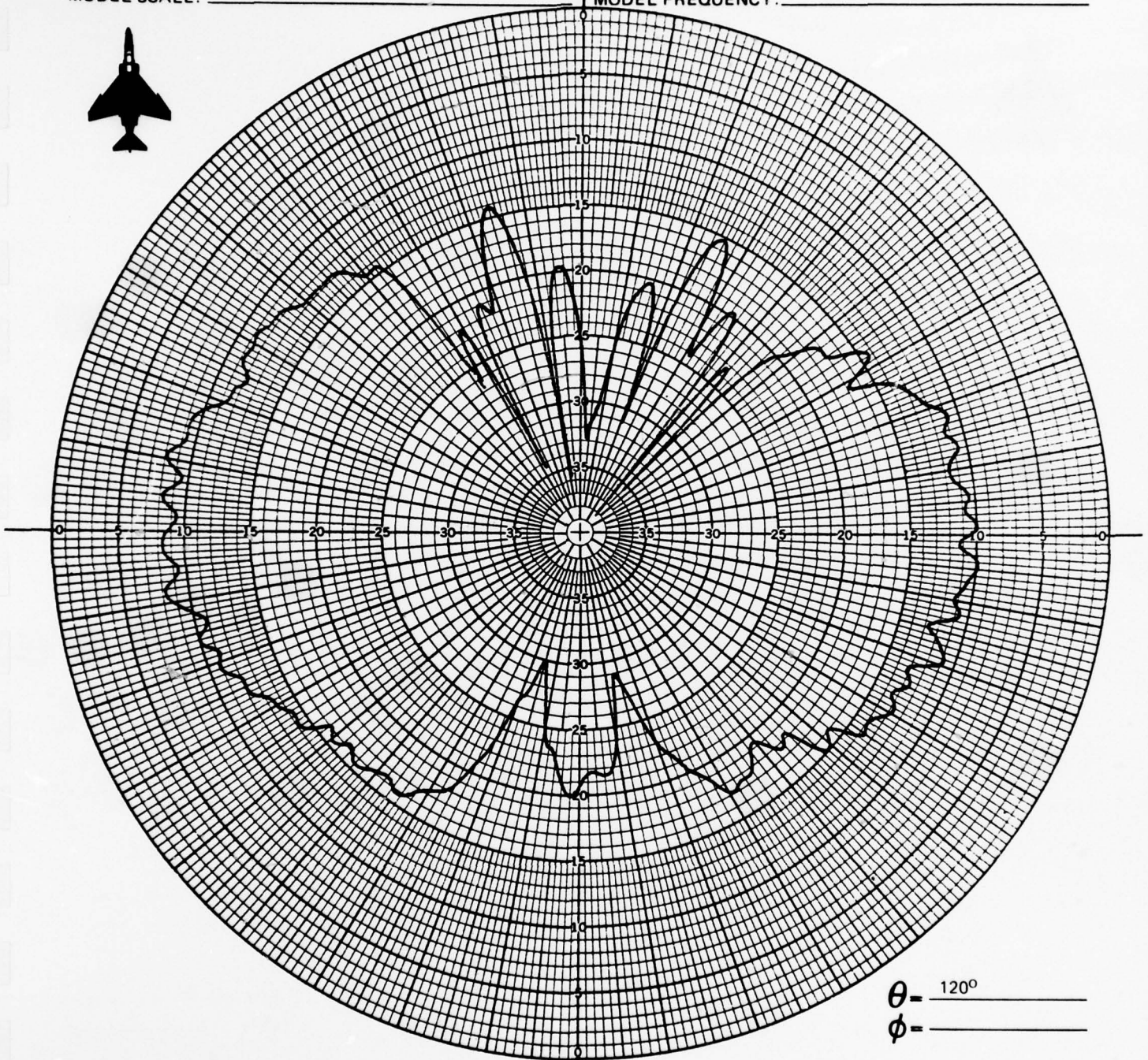
TEST IDENT.: _____ 703-174 (F-4)

ANTENNA LOCATION: _____ FINCAP

FULL SCALE FREQUENCY: _____

MODEL SCALE: _____ 1/5

MODEL FREQUENCY: _____



θ - 120°
 ϕ - _____

CONFIGURATION: _____ 29

INTEGRATOR COUNT: _____

REMARKS: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: _____ 285 FT

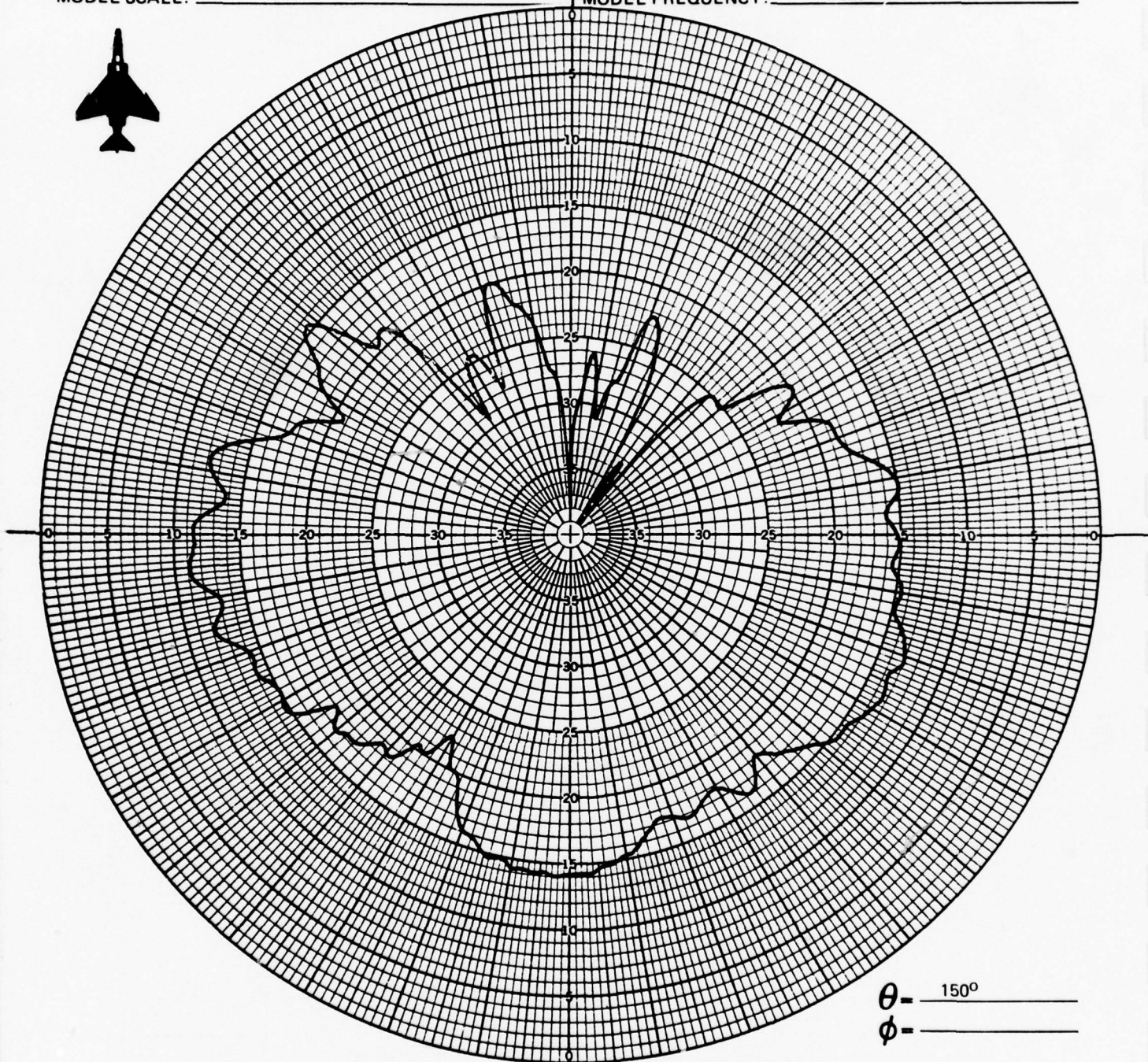
OBSERVER: _____ PN, BM

DATE: _____

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 325 MHz
MODEL FREQUENCY: _____ 1625 MHz



θ - 150°
 ϕ - _____

CONFIGURATION: _____ 29
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: ☒ $E\phi$ ☐ $E\theta$ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: 4-19-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE

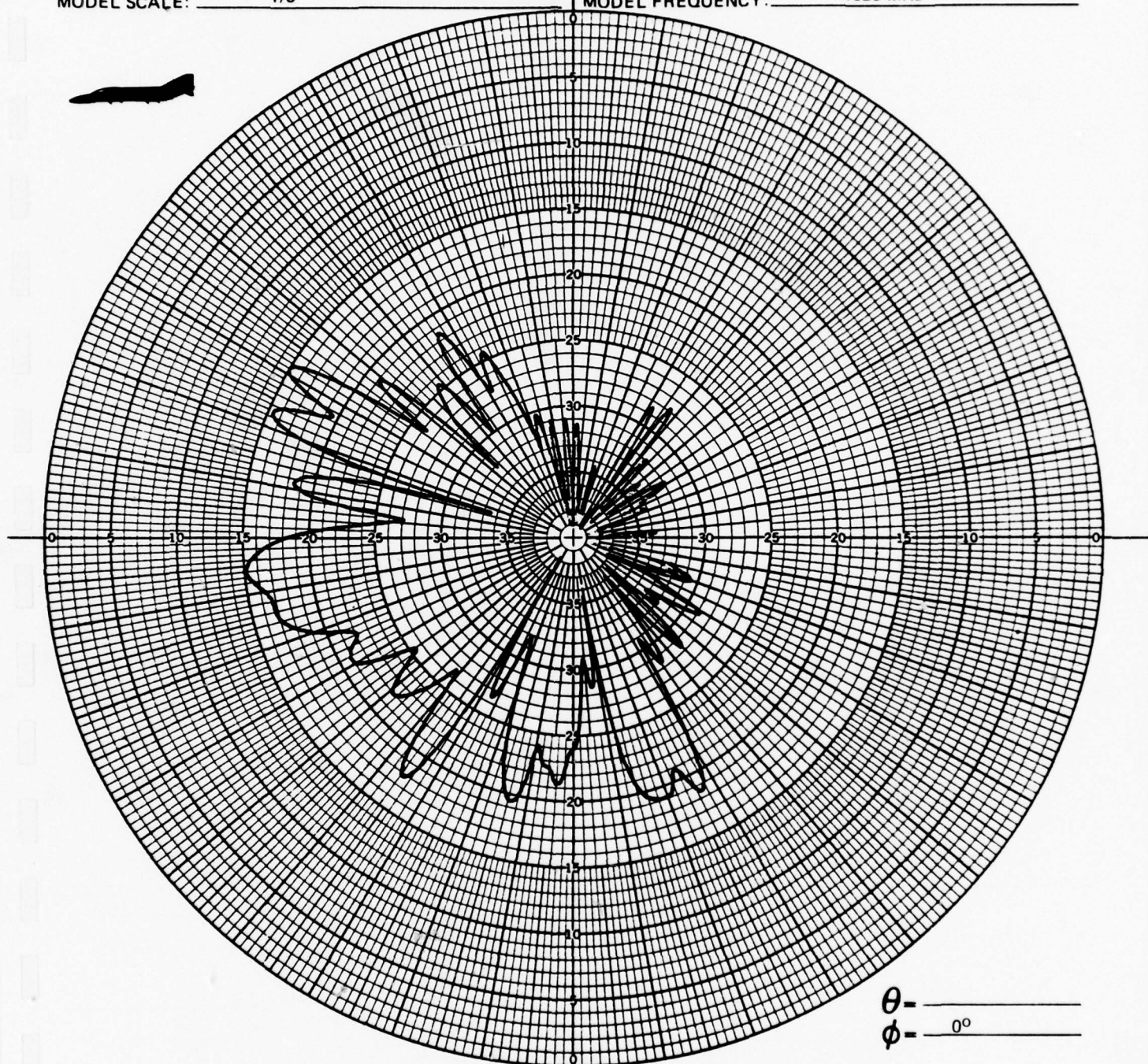
ANTENNA LOCATION: _____ FINCAP

MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)

FULL SCALE FREQUENCY: _____ 325 MHz

MODEL FREQUENCY: _____ 1625 MHz



θ - _____
 ϕ - _____ 0°

CONFIGURATION: _____ 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

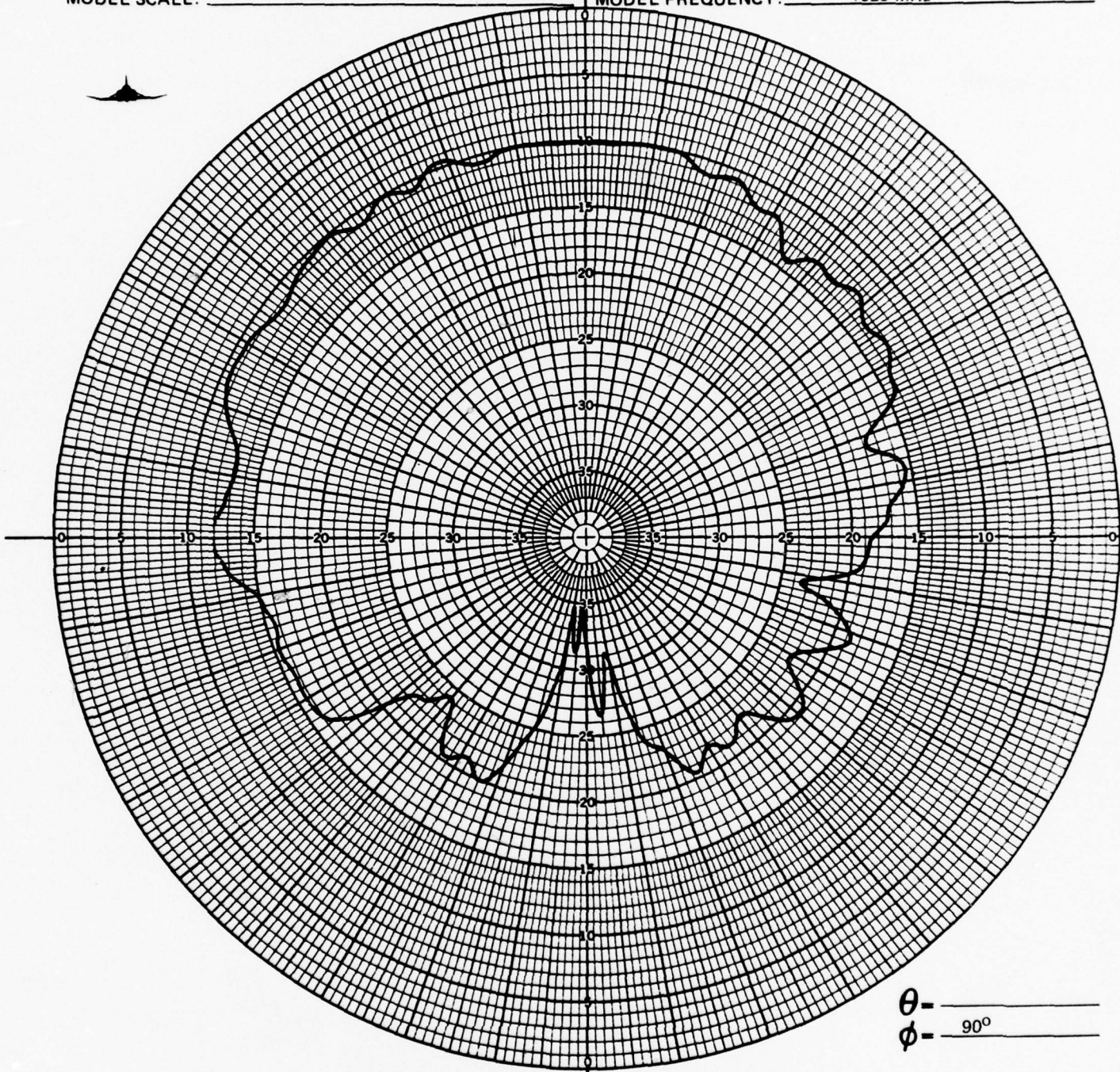
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: 4-19-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 325 MHz
MODEL FREQUENCY: _____ 1625 MHz



θ - _____
 ϕ - 90°

CONFIGURATION: _____ 29
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: 4-19-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE

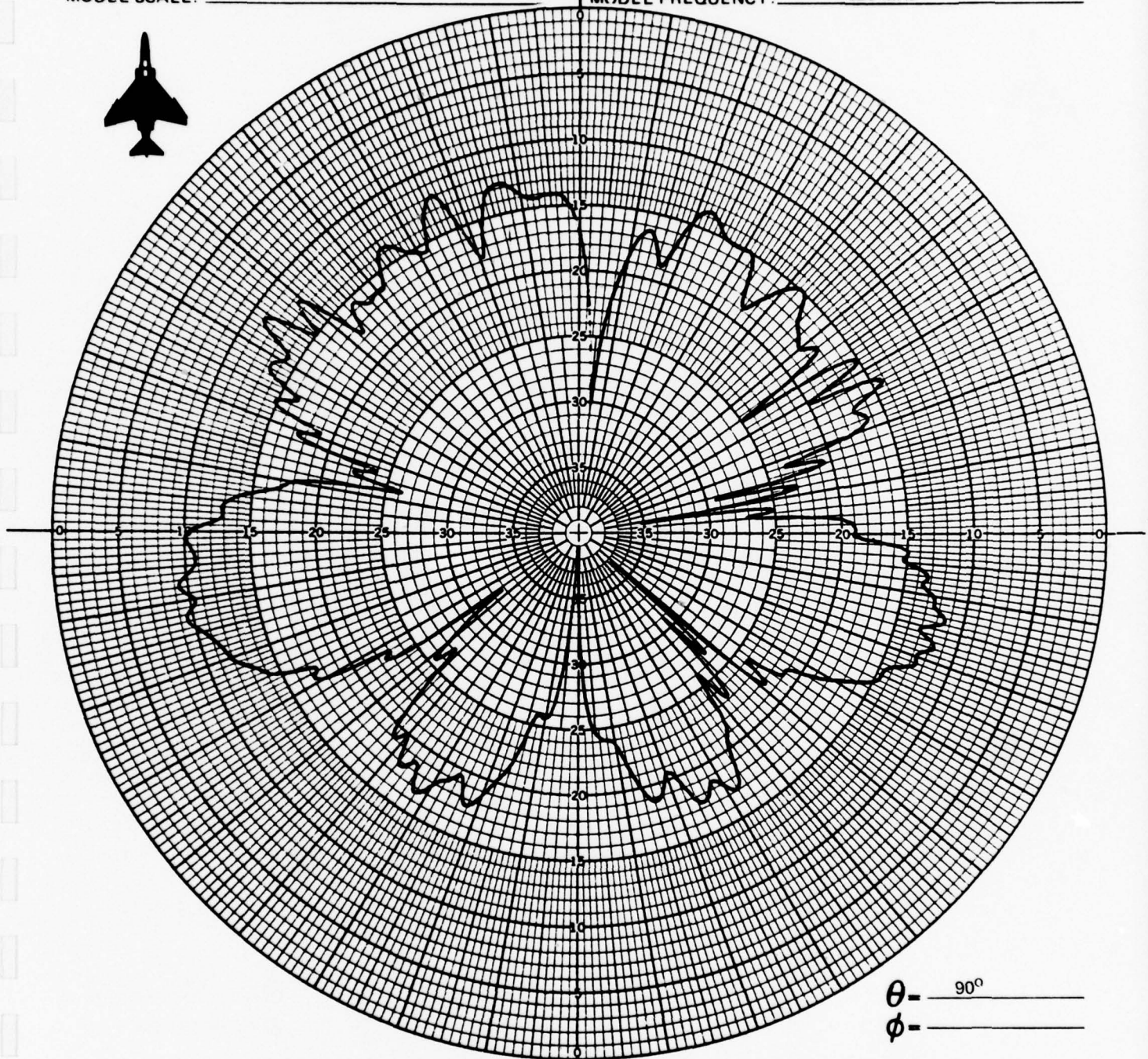
ANTENNA LOCATION: _____ FINCAP

MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)

FULL SCALE FREQUENCY: _____ 325 MHz

MODEL FREQUENCY: _____ 1625 MHz



θ - 90°
 ϕ - _____

CONFIGURATION: _____ 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

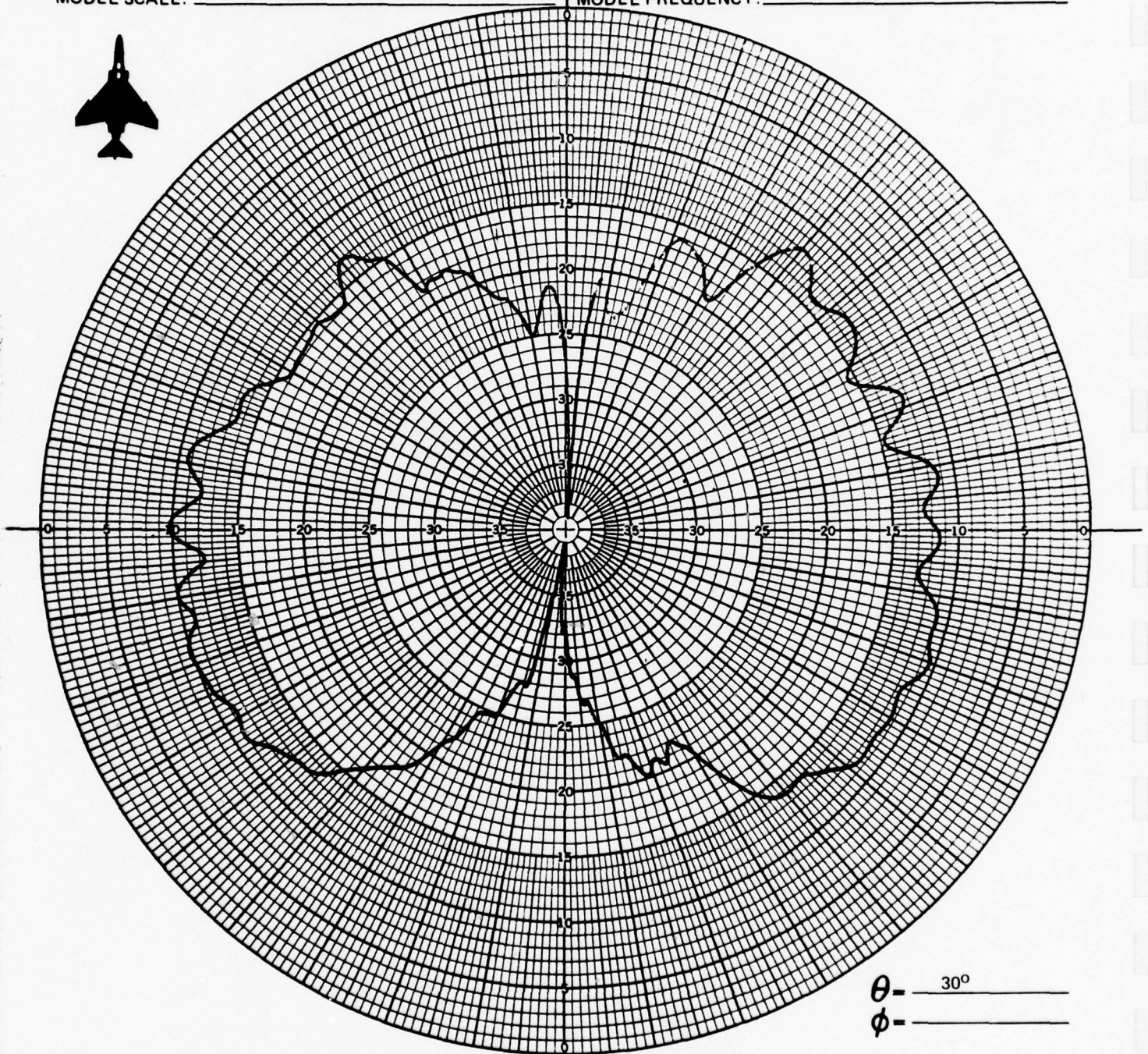
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: 4-19-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 325 MHz
MODEL FREQUENCY: 1625 MHz



θ - 30°
 ϕ - _____

CONFIGURATION: 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

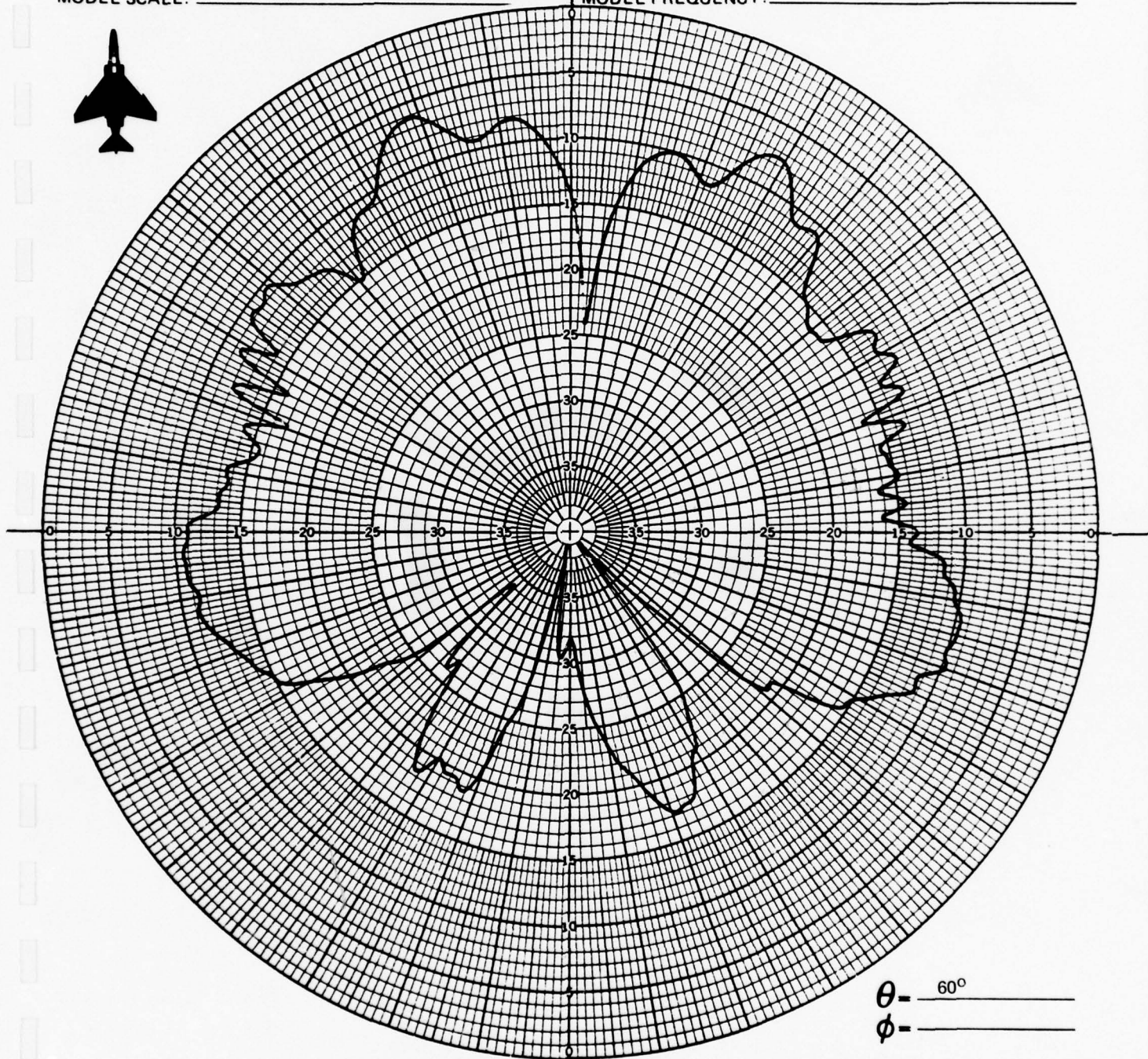
TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: _____

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 325 MHz
MODEL FREQUENCY: _____ 1625 MHz



θ - 60°
 ϕ - _____

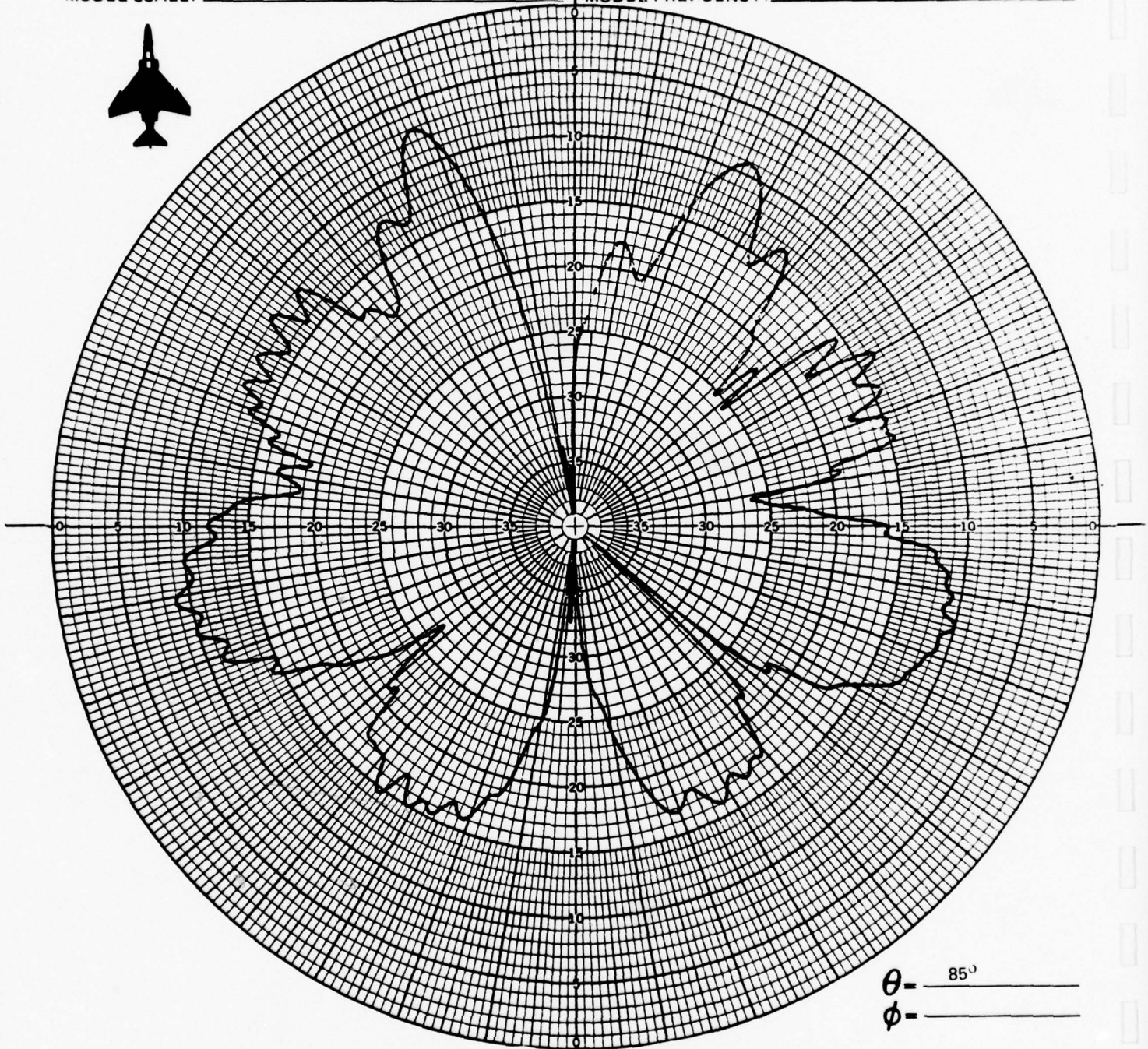
CONFIGURATION: _____ 29
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: E ϕ ☒ E θ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: _____ 4-19-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 325 MHz
MODEL FREQUENCY: _____ 1625 MHz



θ - 85°
 ϕ - _____

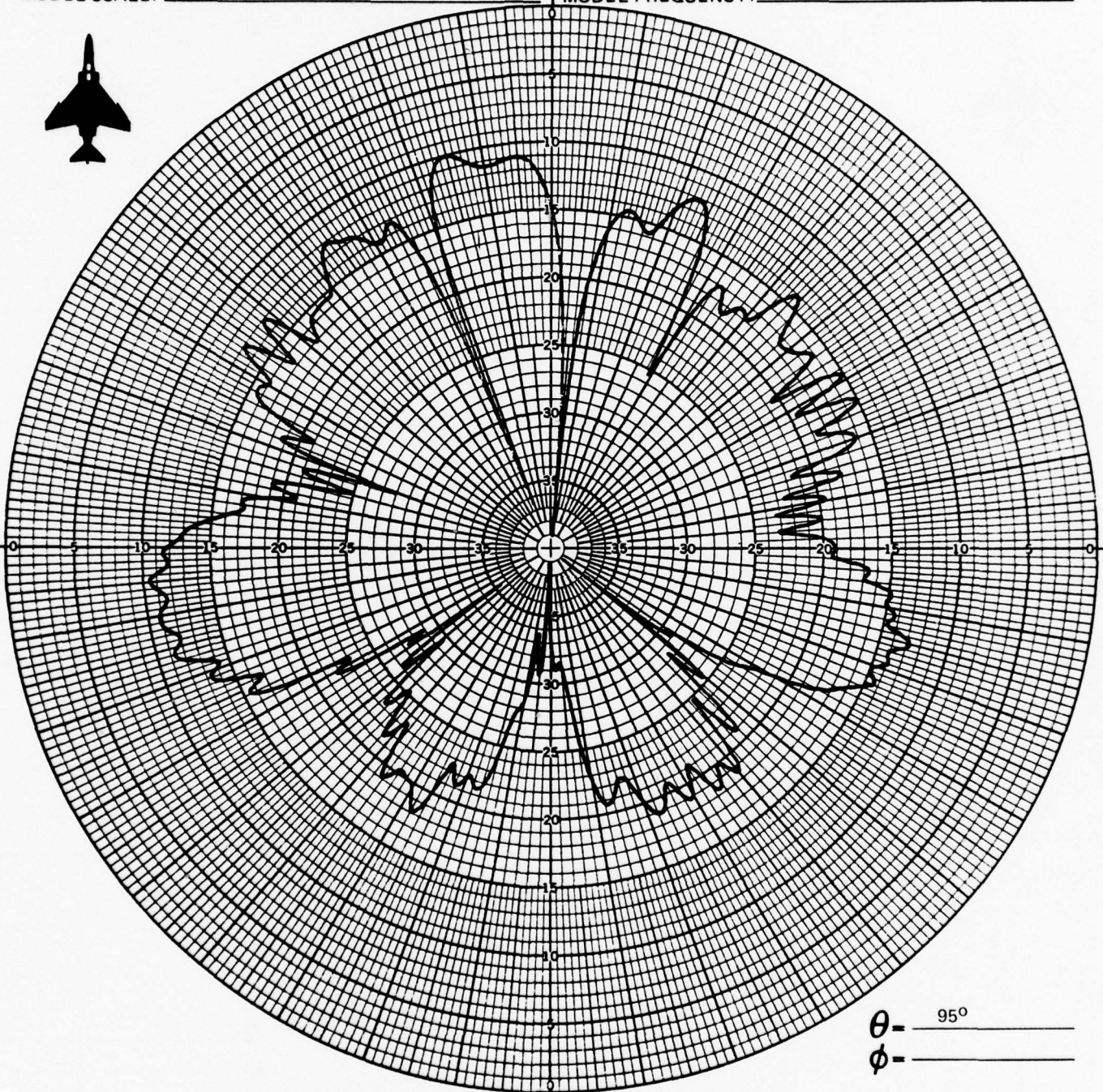
CONFIGURATION: _____ 29
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: E ϕ ☒ E θ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: 4-19-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 325 MHz
MODEL FREQUENCY: _____ 1625 MHz



θ - 95°
 ϕ - _____

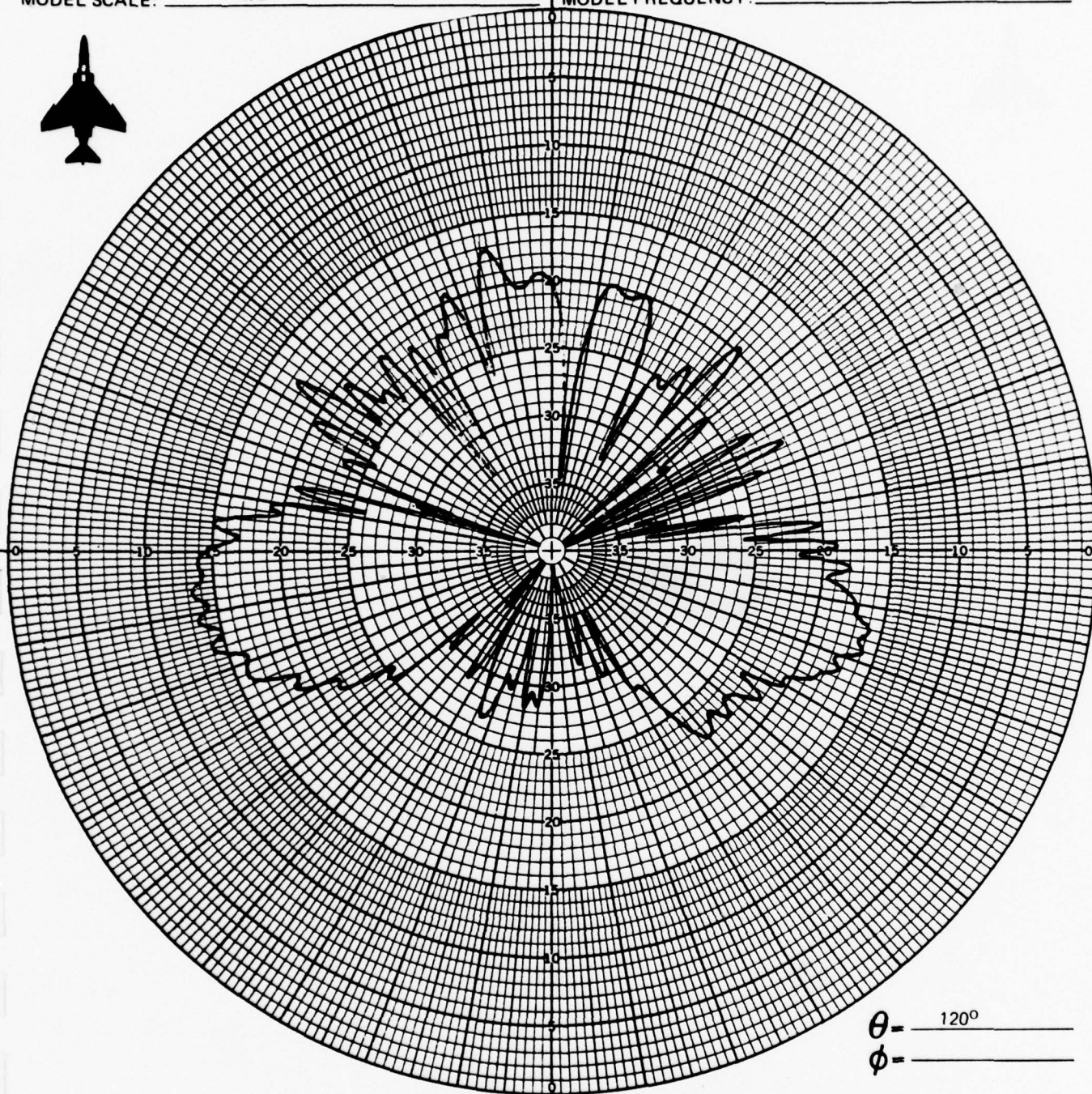
CONFIGURATION: _____ 29
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: E ϕ ☒ E θ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: _____ 4-19-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 325 MHz
MODEL FREQUENCY: 1625 MHz



θ = 120°
 ϕ = _____

CONFIGURATION: 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 4-19-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE

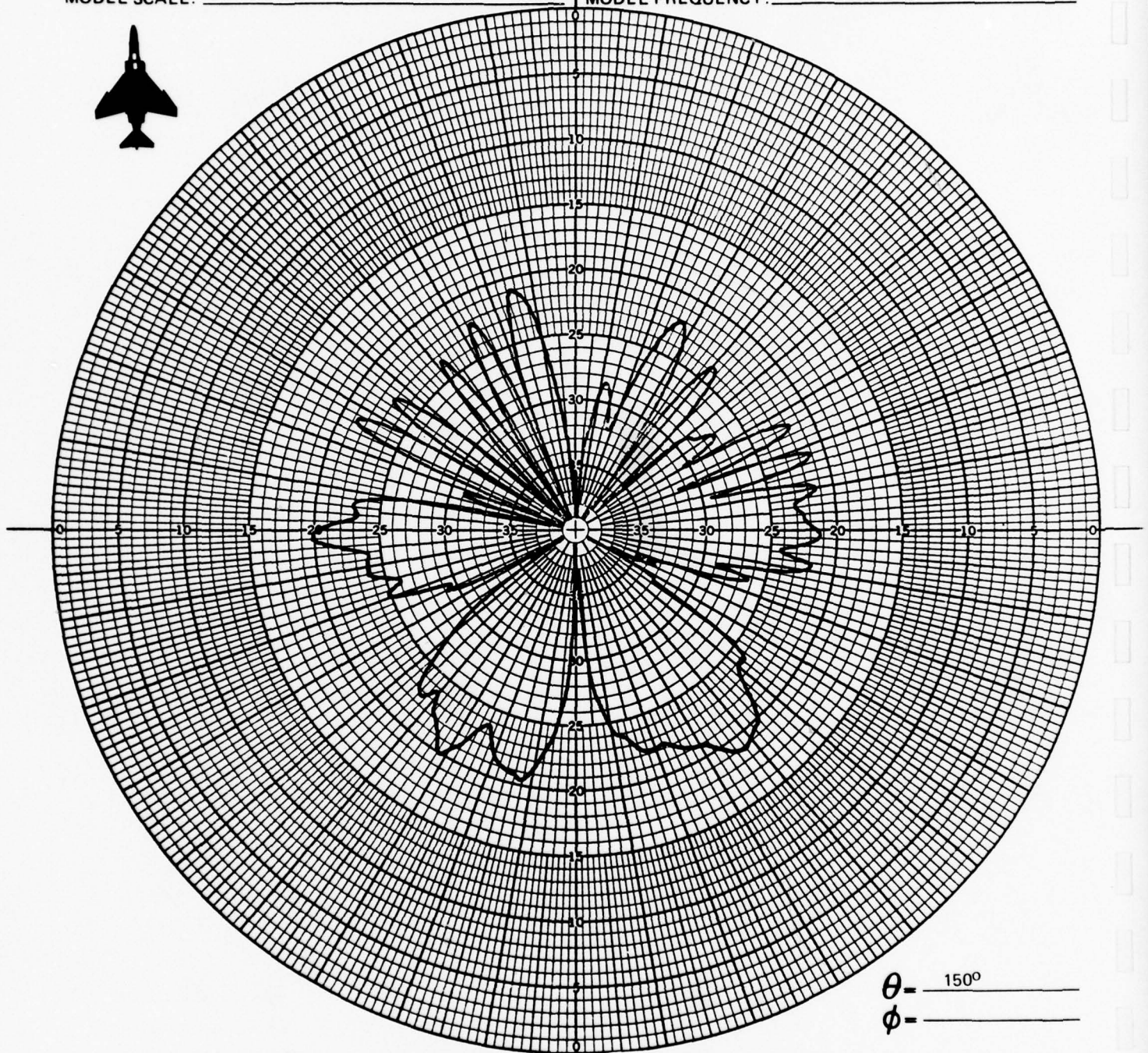
ANTENNA LOCATION: _____ FINCAP

MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)

FULL SCALE FREQUENCY: _____ 325 MHz

MODEL FREQUENCY: _____ 1625 MHz



θ - 150°
 ϕ - _____

CONFIGURATION: _____ 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

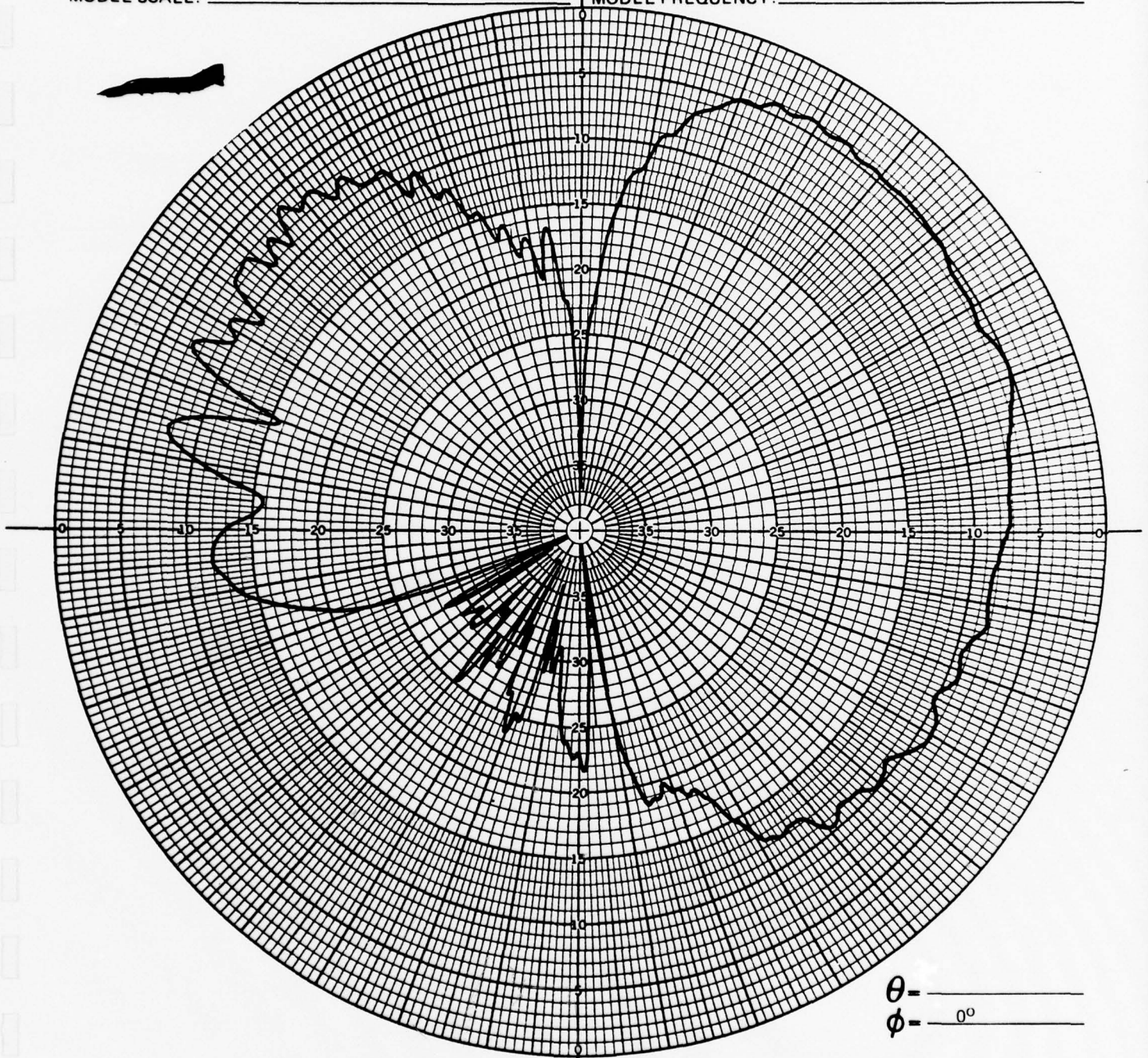
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: 4-19-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 400 MHz
MODEL FREQUENCY: 2000 MHz



θ = _____
 ϕ = 0°

CONFIGURATION: 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

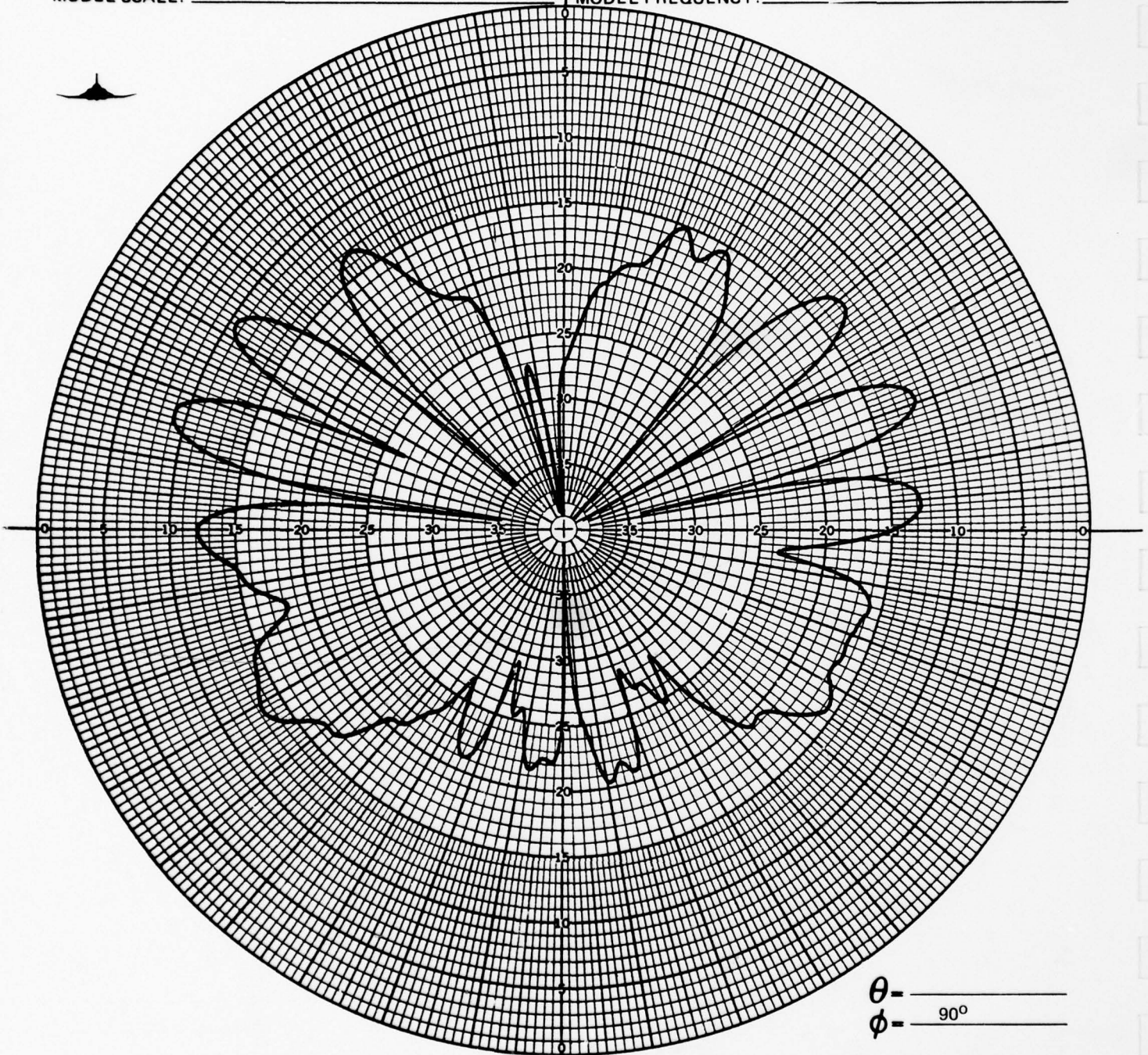
TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 4-20-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 400 MHz
MODEL FREQUENCY: 2000 MHz



θ = _____
 ϕ = 90°

CONFIGURATION: 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 4-20-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE

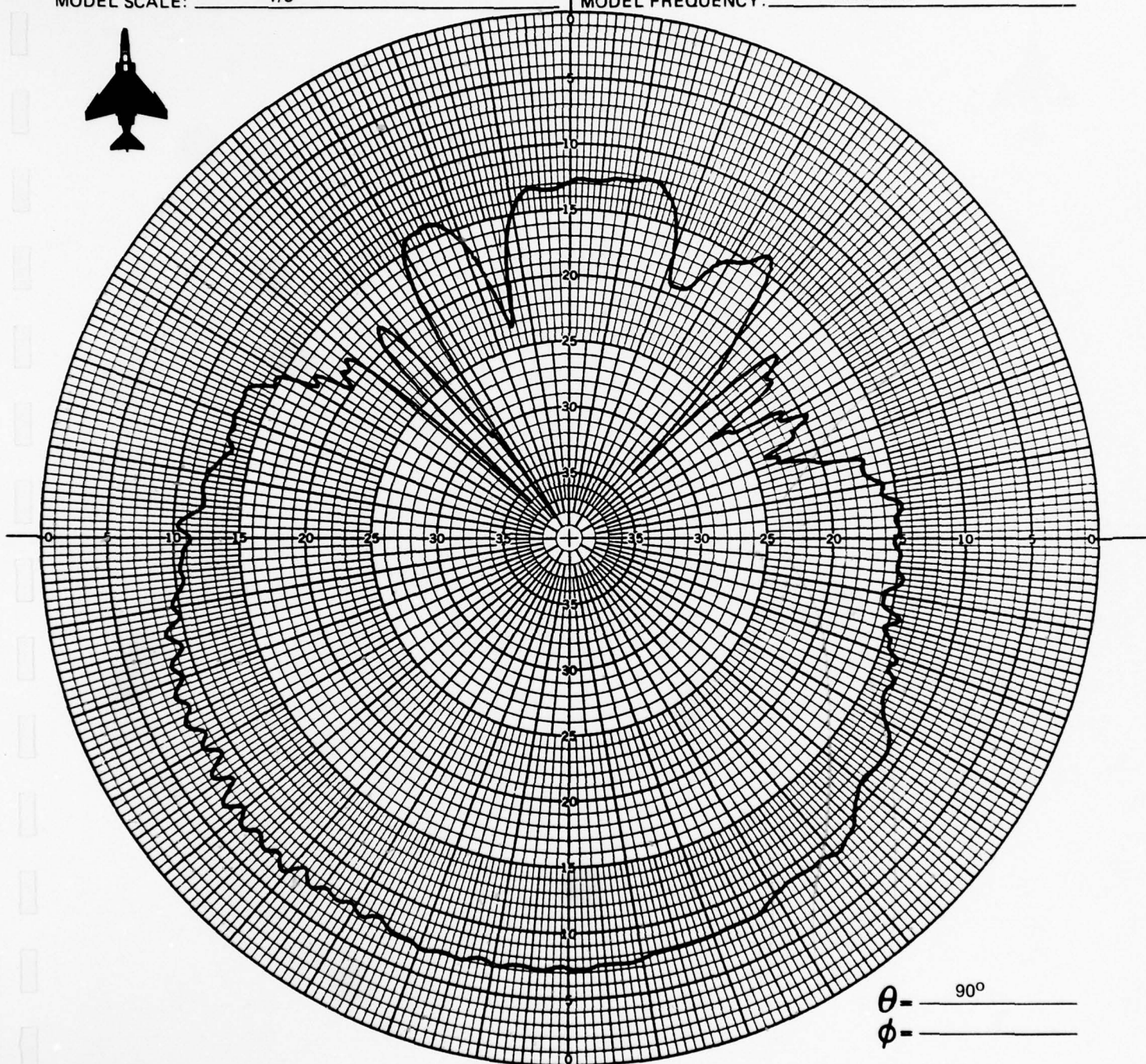
ANTENNA LOCATION: FINCAP

MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)

FULL SCALE FREQUENCY: 400 MHz

MODEL FREQUENCY: 2000 MHz


$$\theta = 90^\circ$$

$$\phi =$$

CONFIGURATION: 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: E ϕ ☐ E θ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 4-20-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE

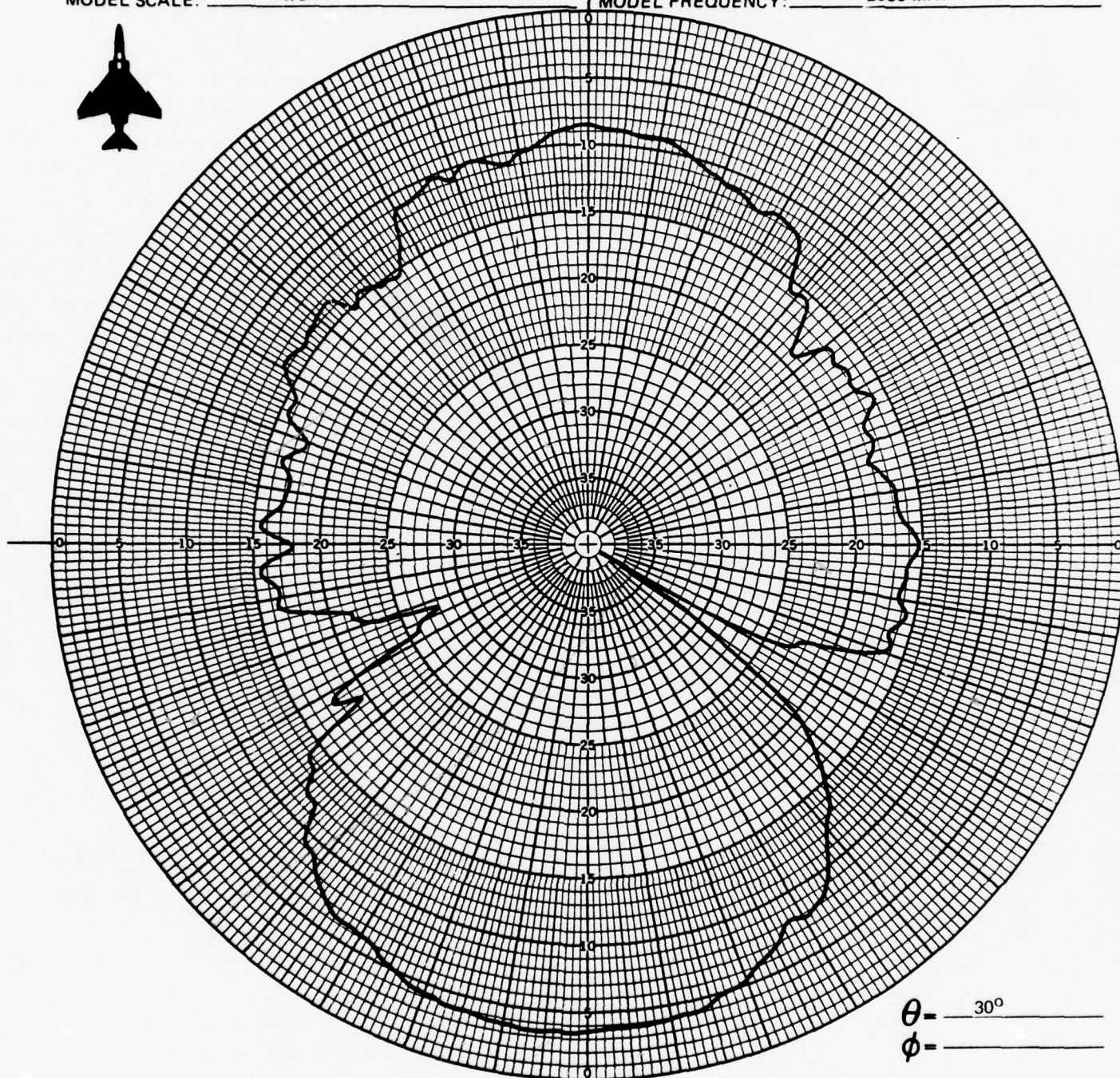
ANTENNA LOCATION: _____ FINCAP

MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)

FULL SCALE FREQUENCY: _____ 400 MHz

MODEL FREQUENCY: _____ 2000 MHz



θ - 30°
 ϕ - _____

CONFIGURATION: _____ 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

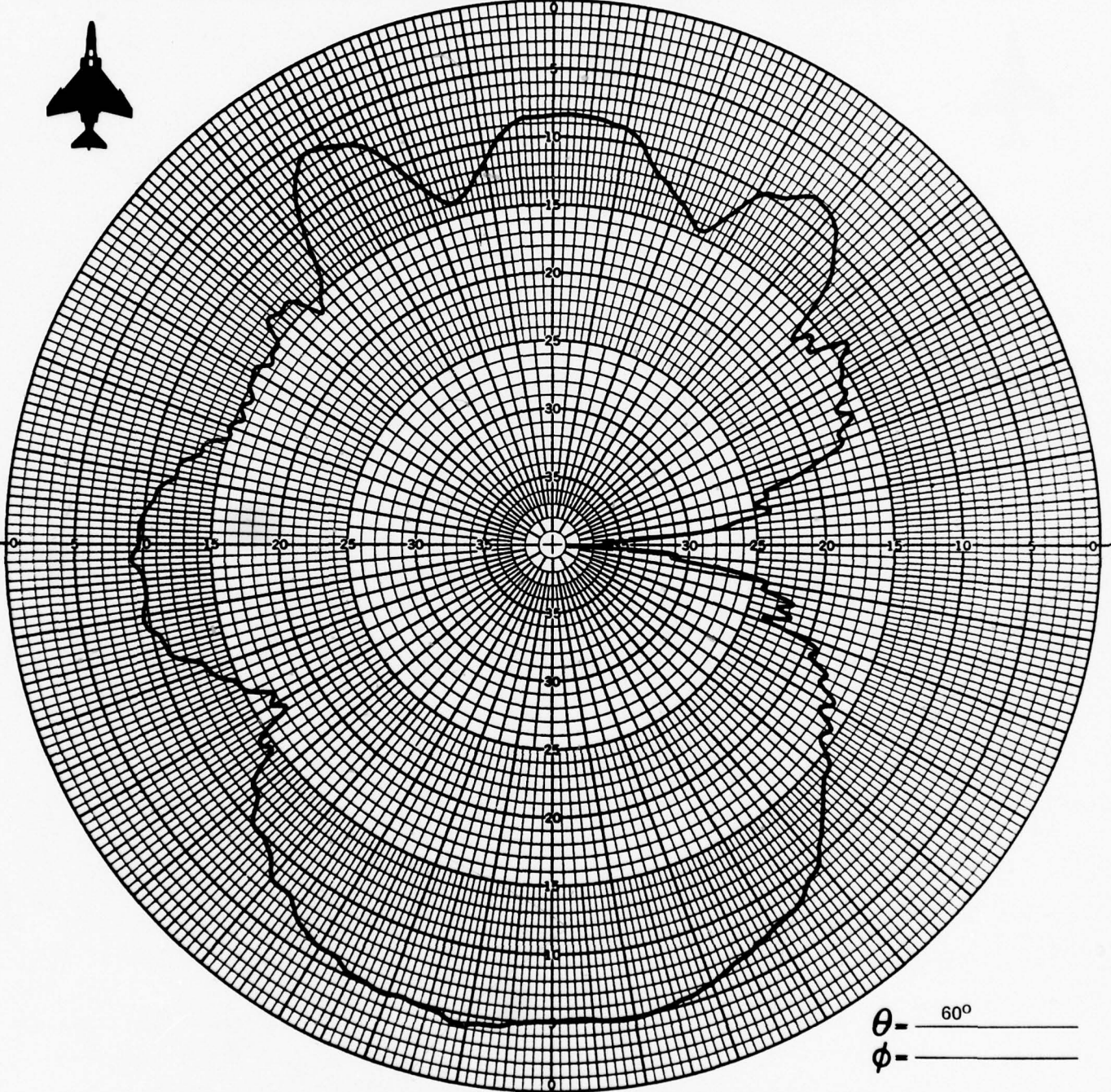
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: 4-20-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 400 MHz
MODEL FREQUENCY: _____ 2000 MHz



θ - 60°
 ϕ - _____

CONFIGURATION: _____ 29
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: E ☒ ϕ ☐ E ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: 4-20-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE

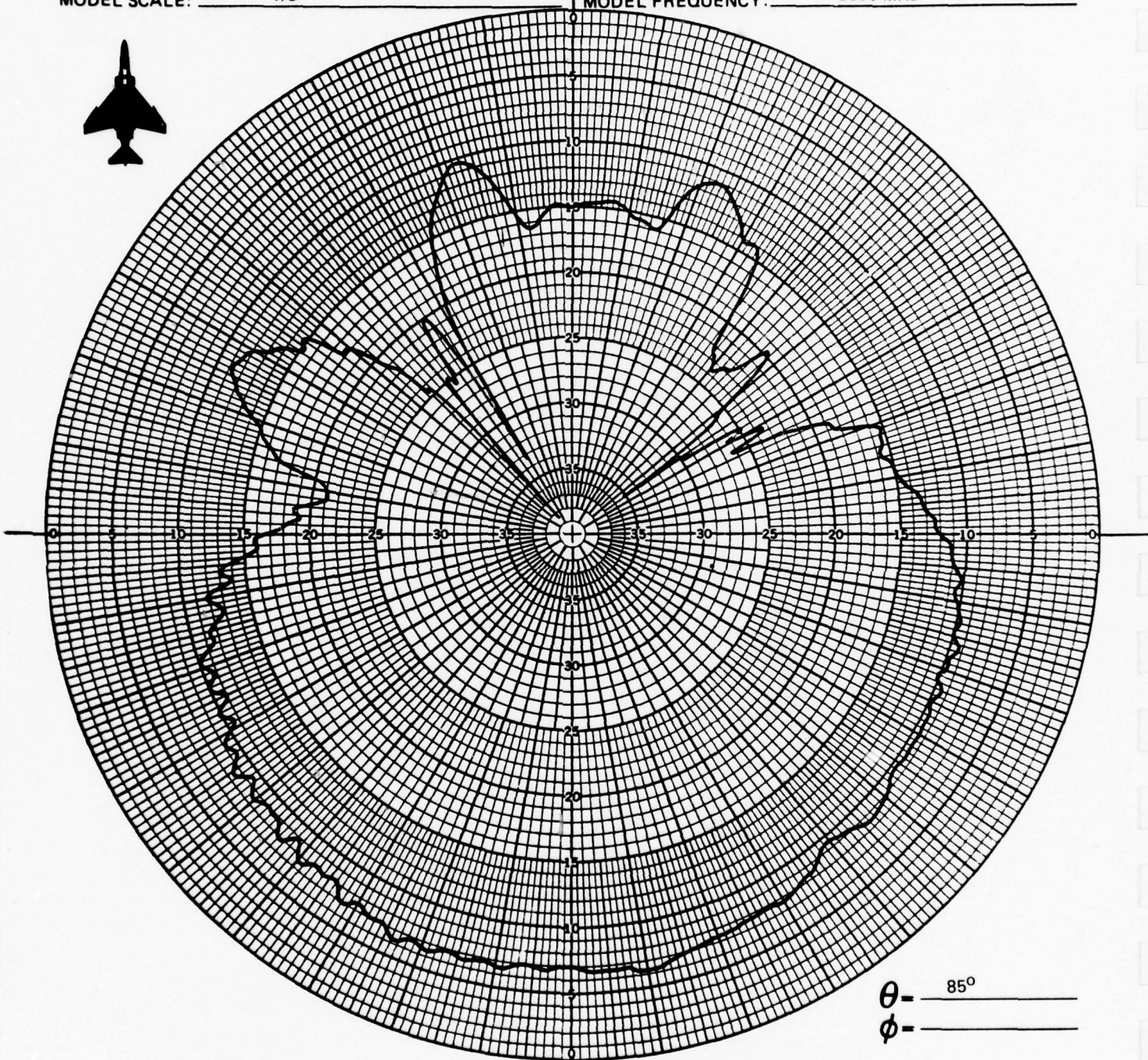
ANTENNA LOCATION: _____ FINCAP

MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)

FULL SCALE FREQUENCY: _____ 400 MHz

MODEL FREQUENCY: _____ 2000 MHz



θ - 85°
 ϕ - _____

CONFIGURATION: _____ 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: _____ 285 FT

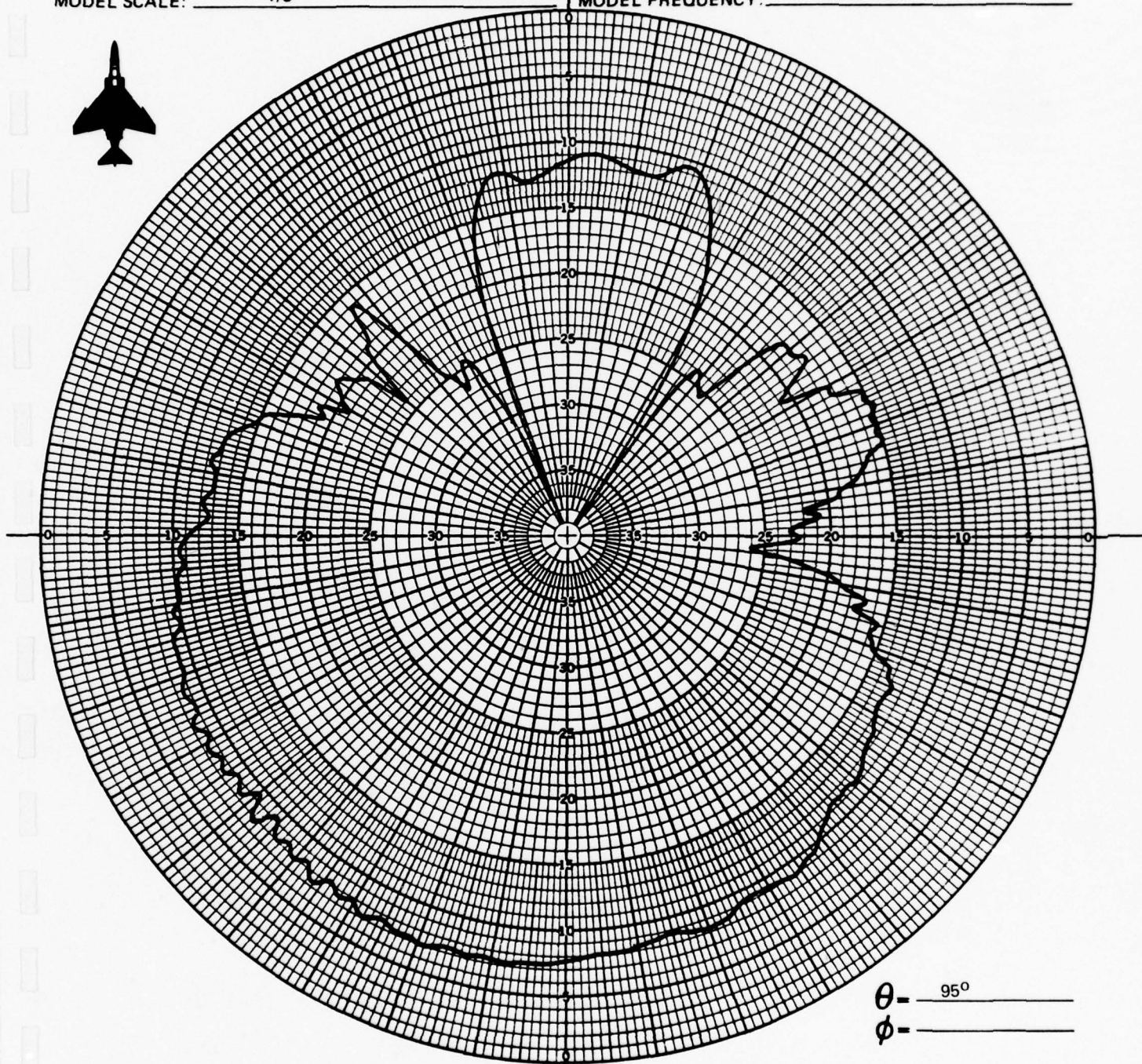
OBSERVER: _____ PN, BM

DATE: _____ 4-20-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 400 MHz
MODEL FREQUENCY: _____ 2000 MHz



θ - 95°
 ϕ - _____

CONFIGURATION: _____ 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

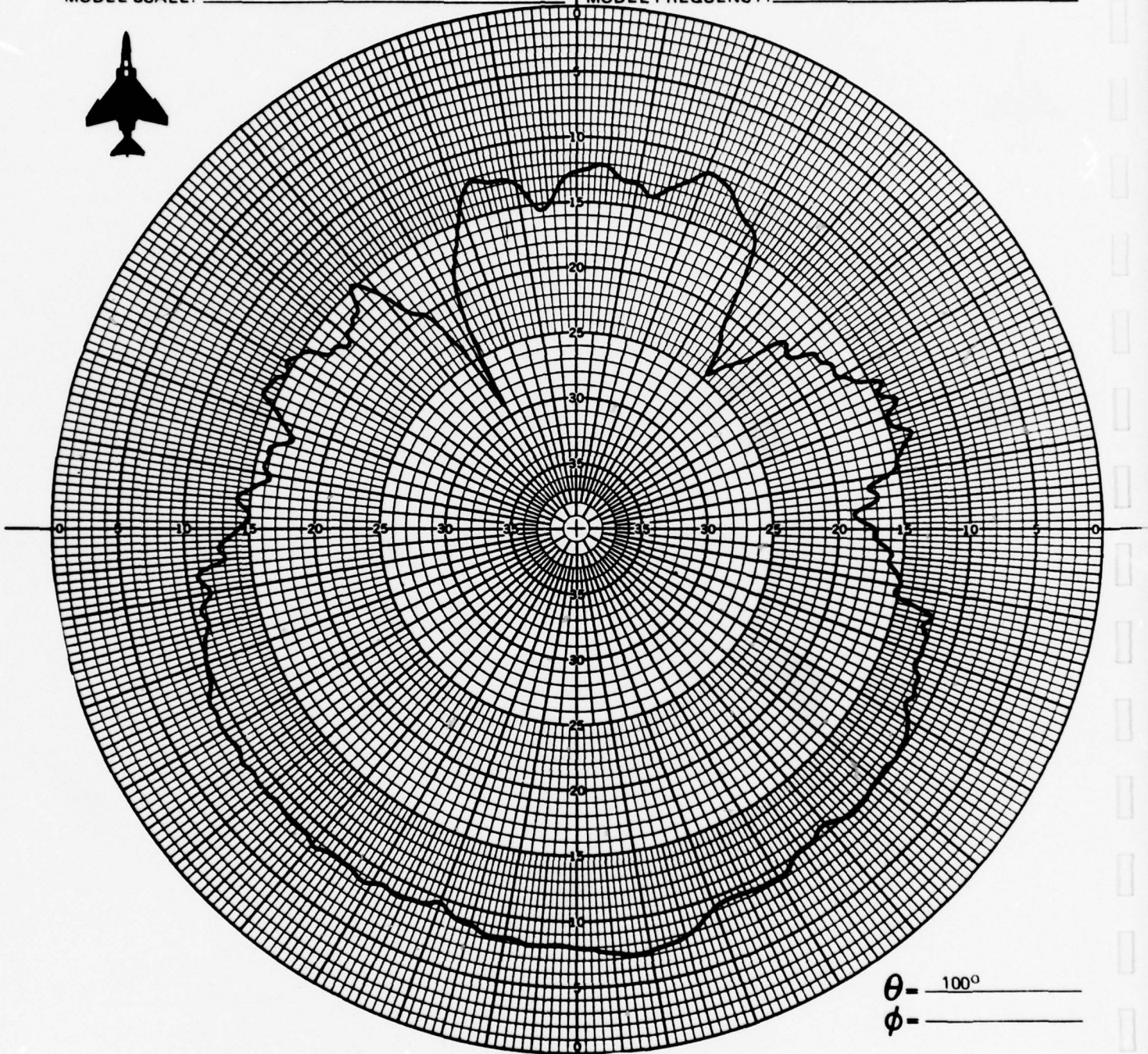
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: 4-20-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 400 MHz
MODEL FREQUENCY: 2000 MHz



θ - 100°
 ϕ - _____

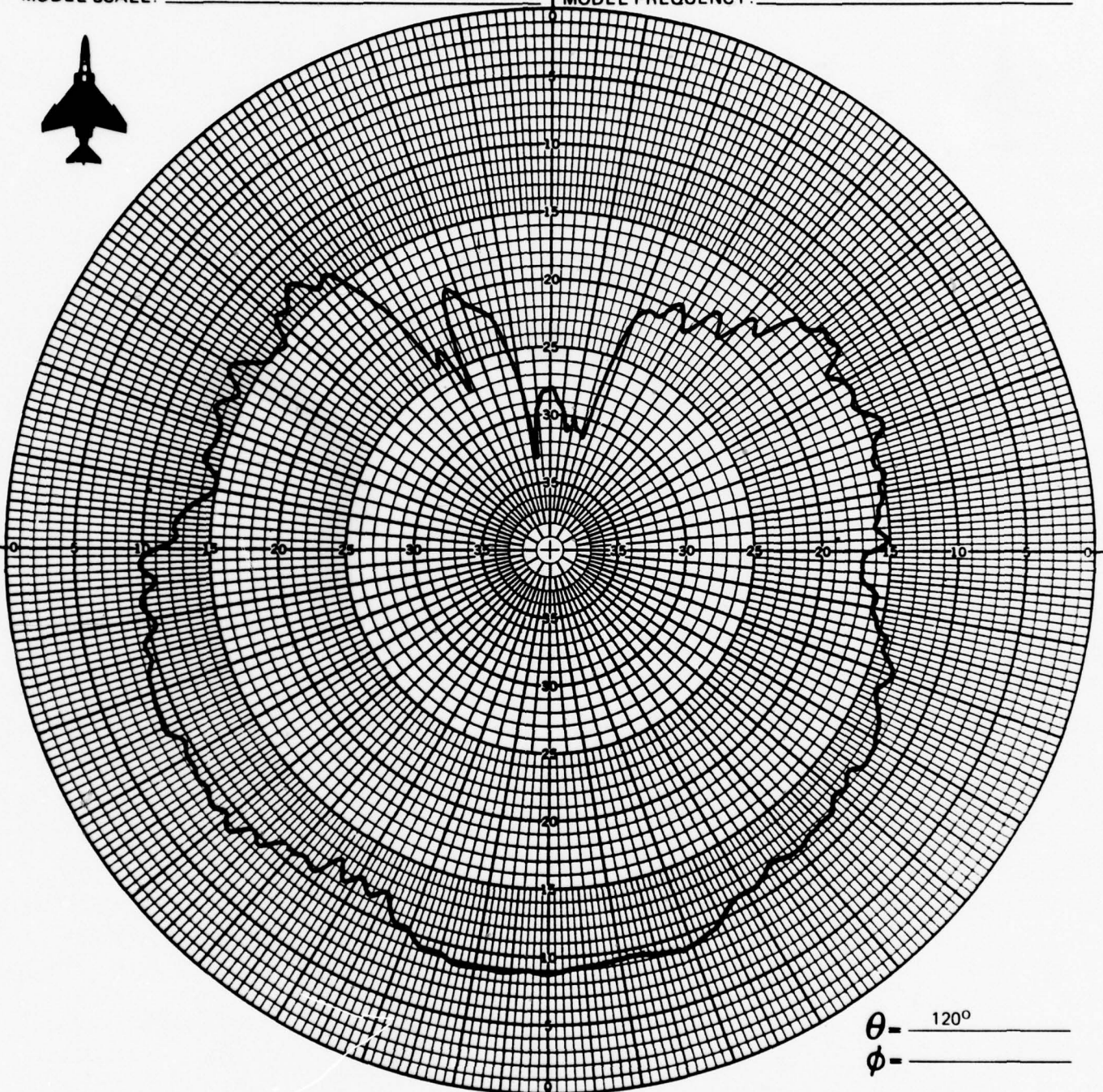
CONFIGURATION: 29
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: 285 FT
OBSERVER: PN, BM DATE: 4-20-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 400 MHz
MODEL FREQUENCY: _____ 2000 MHz



θ - 120°
 ϕ - _____

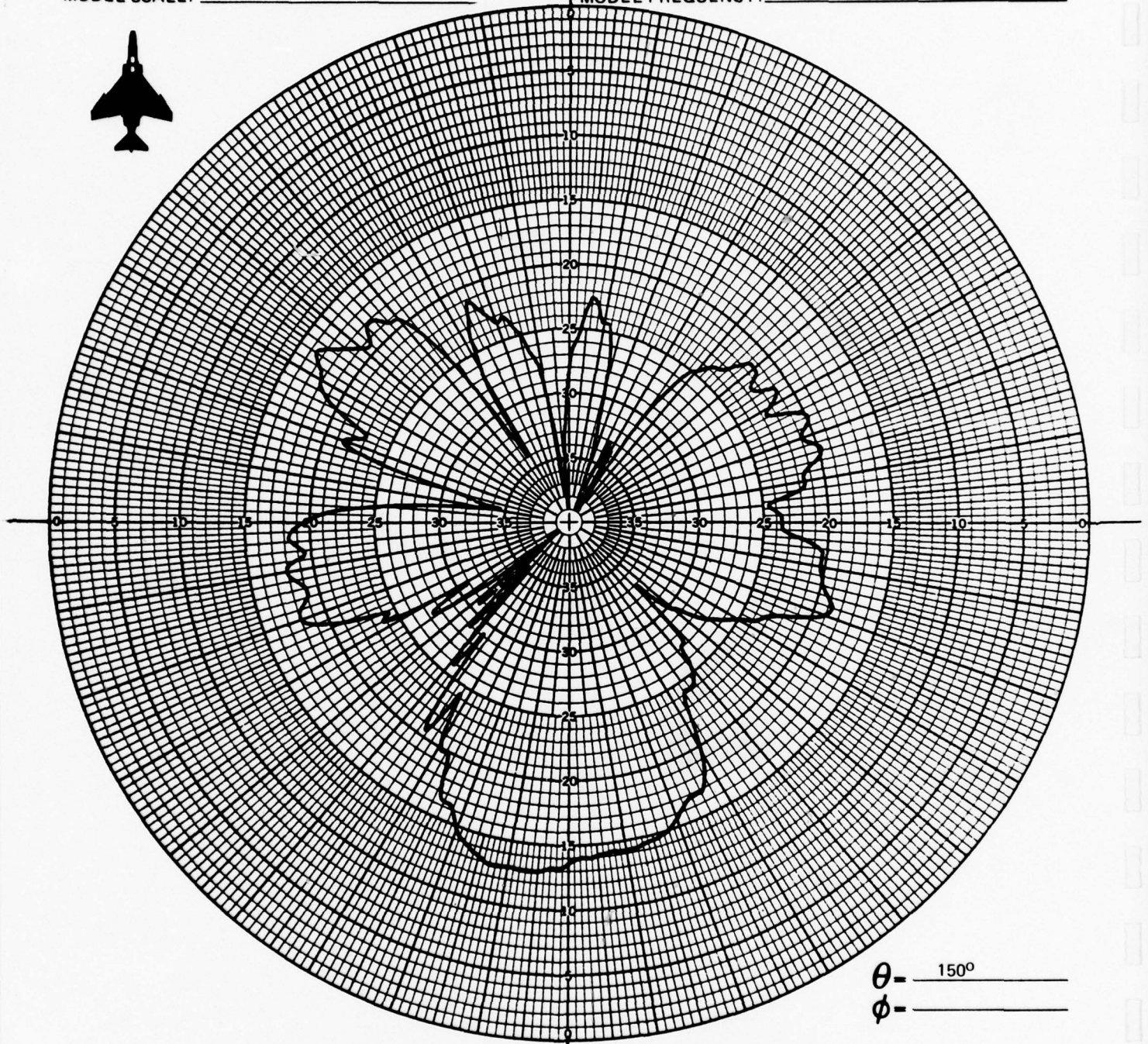
CONFIGURATION: _____ 29
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: 4-20-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 400 MHz
MODEL FREQUENCY: 2000 MHz



θ - 150°
 ϕ - _____

CONFIGURATION: 29

INTEGRATOR COUNT: _____

REMARKS: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

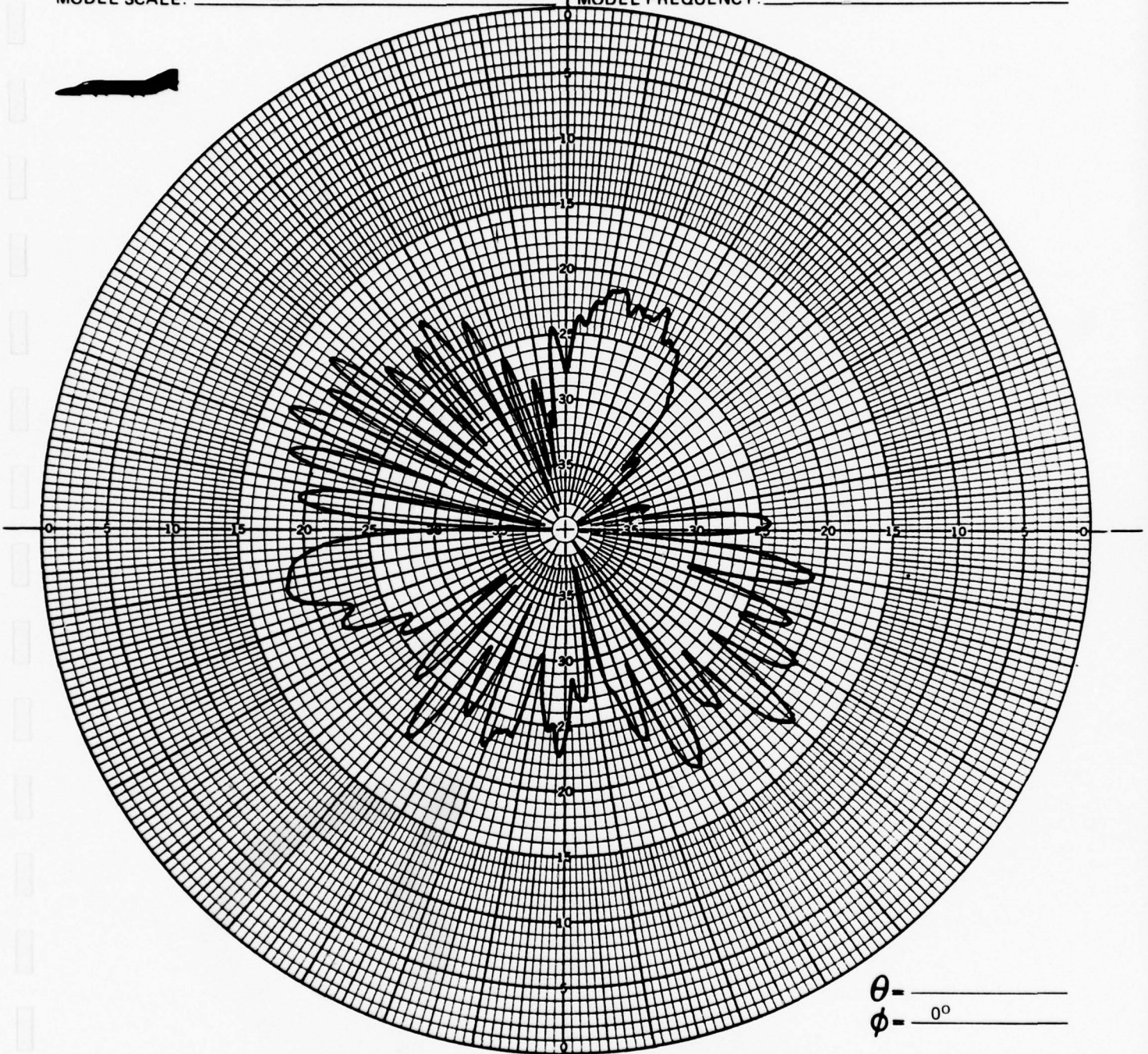
TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 4-20-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 400 MHz
MODEL FREQUENCY: _____ 2000 MHz



θ - _____
 ϕ - 0°

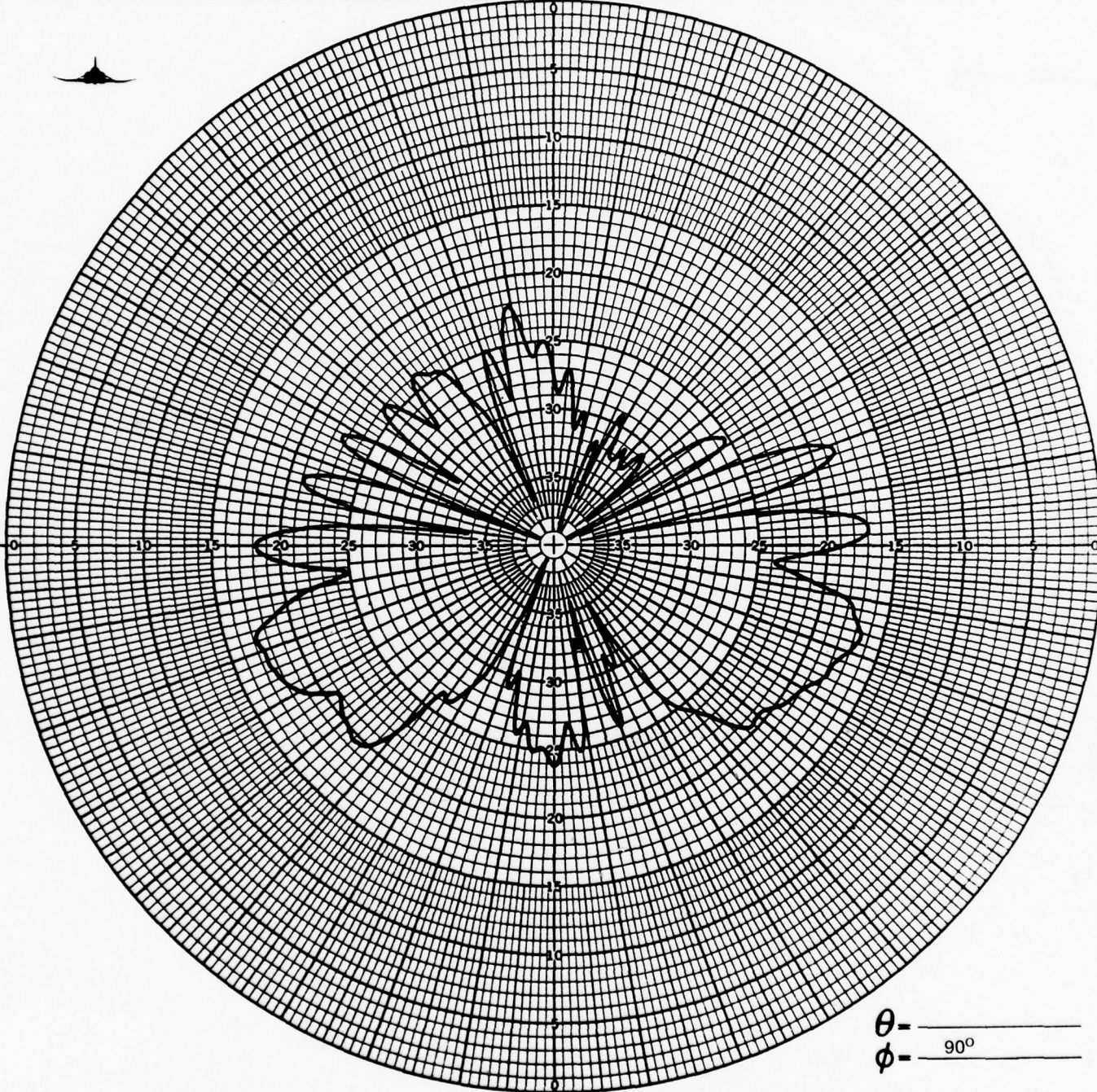
CONFIGURATION: _____ 29
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: 4-20-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 400 MHz
MODEL FREQUENCY: _____ 2000 MHz



θ - _____
 ϕ - _____ 90°

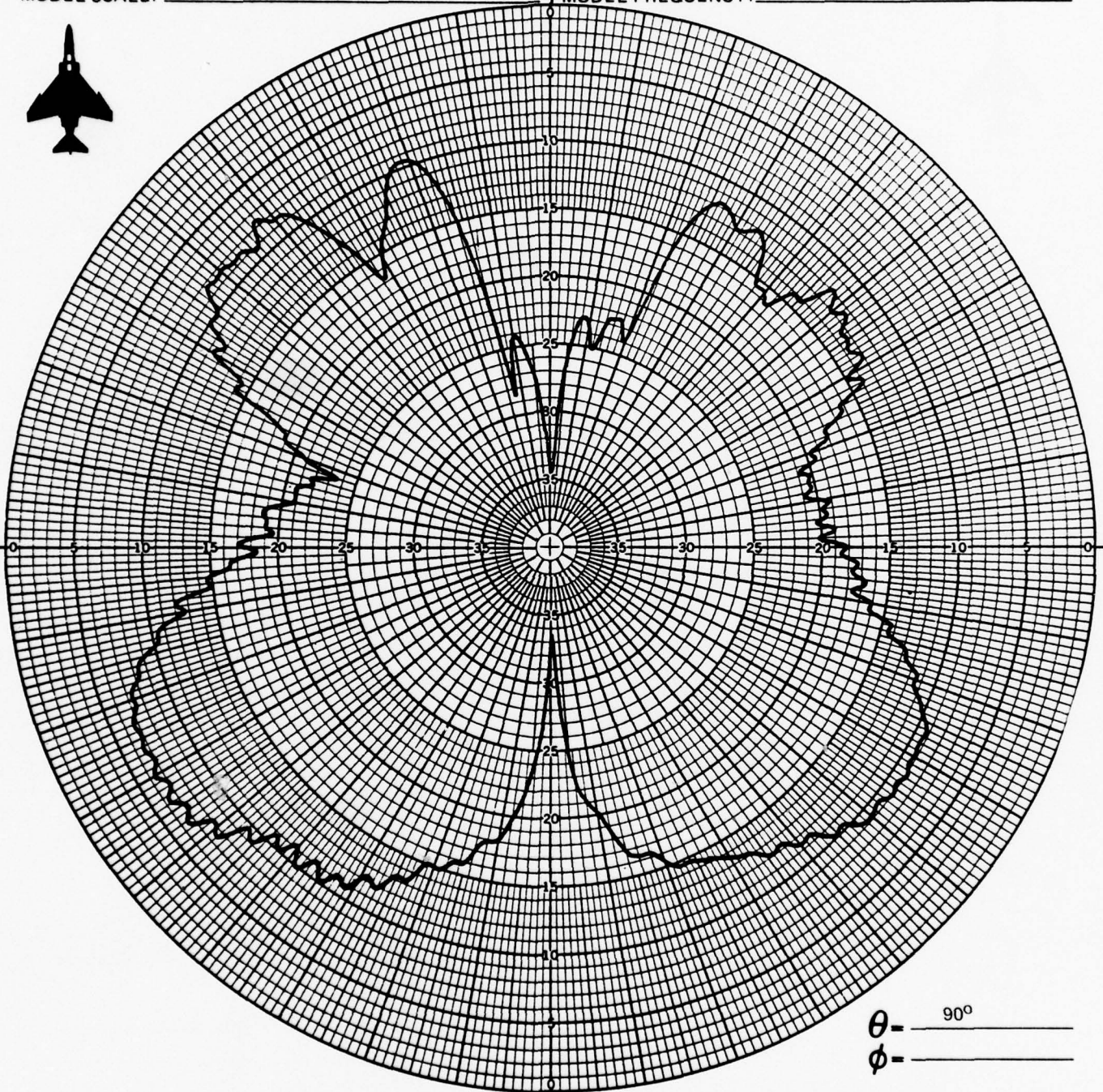
CONFIGURATION: _____ 29
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: E ☒ ϕ ☐ E ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: _____ 4-20-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 400 MHz
MODEL FREQUENCY: 2000 MHz



θ - 90°
 ϕ - _____

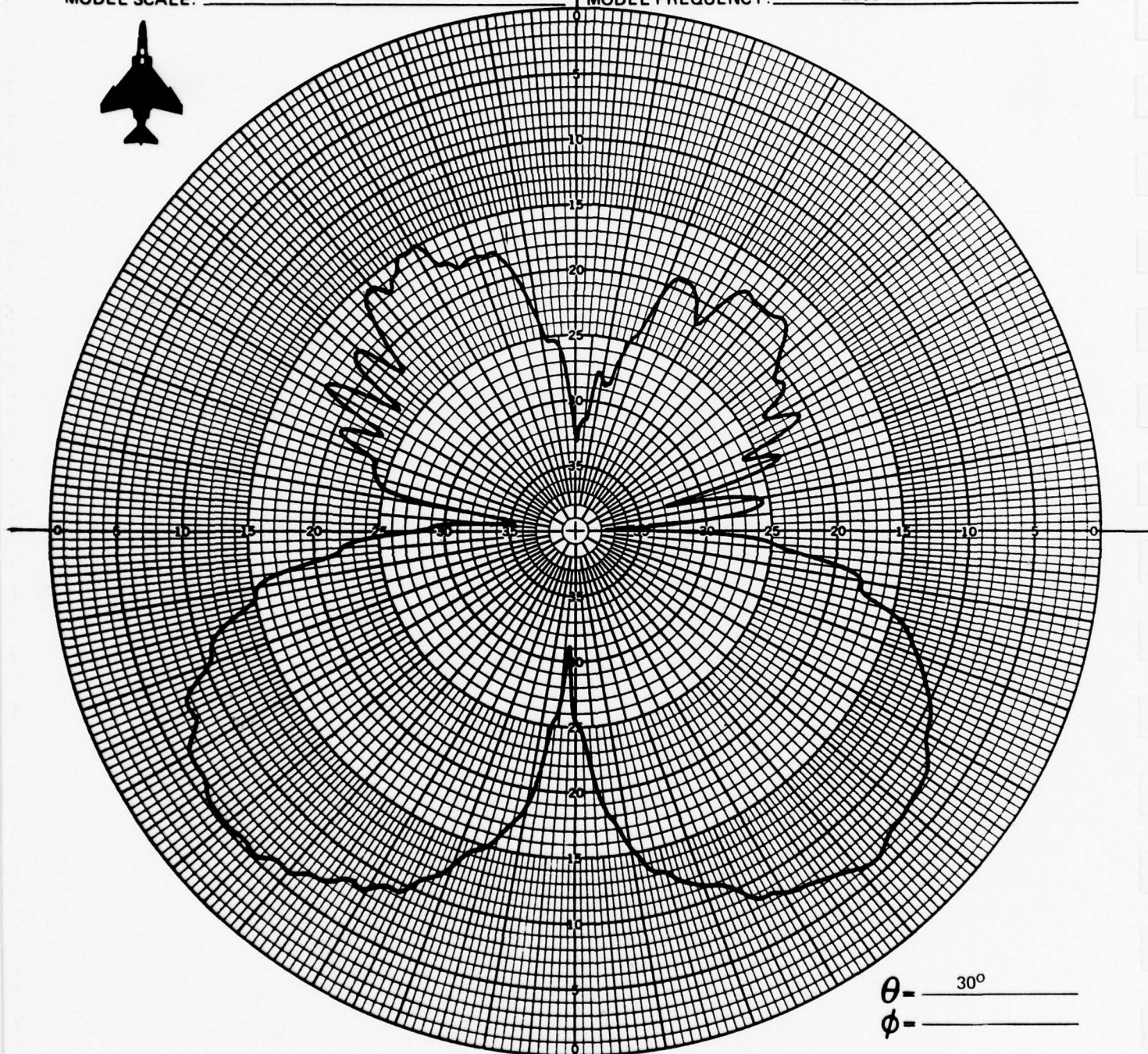
CONFIGURATION: 29
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: 285 FT
OBSERVER: PN, BM DATE: 4-20-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 400 MHz
MODEL FREQUENCY: _____ 2000 MHz



θ = _____ 30°
 ϕ = _____

CONFIGURATION: _____ 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

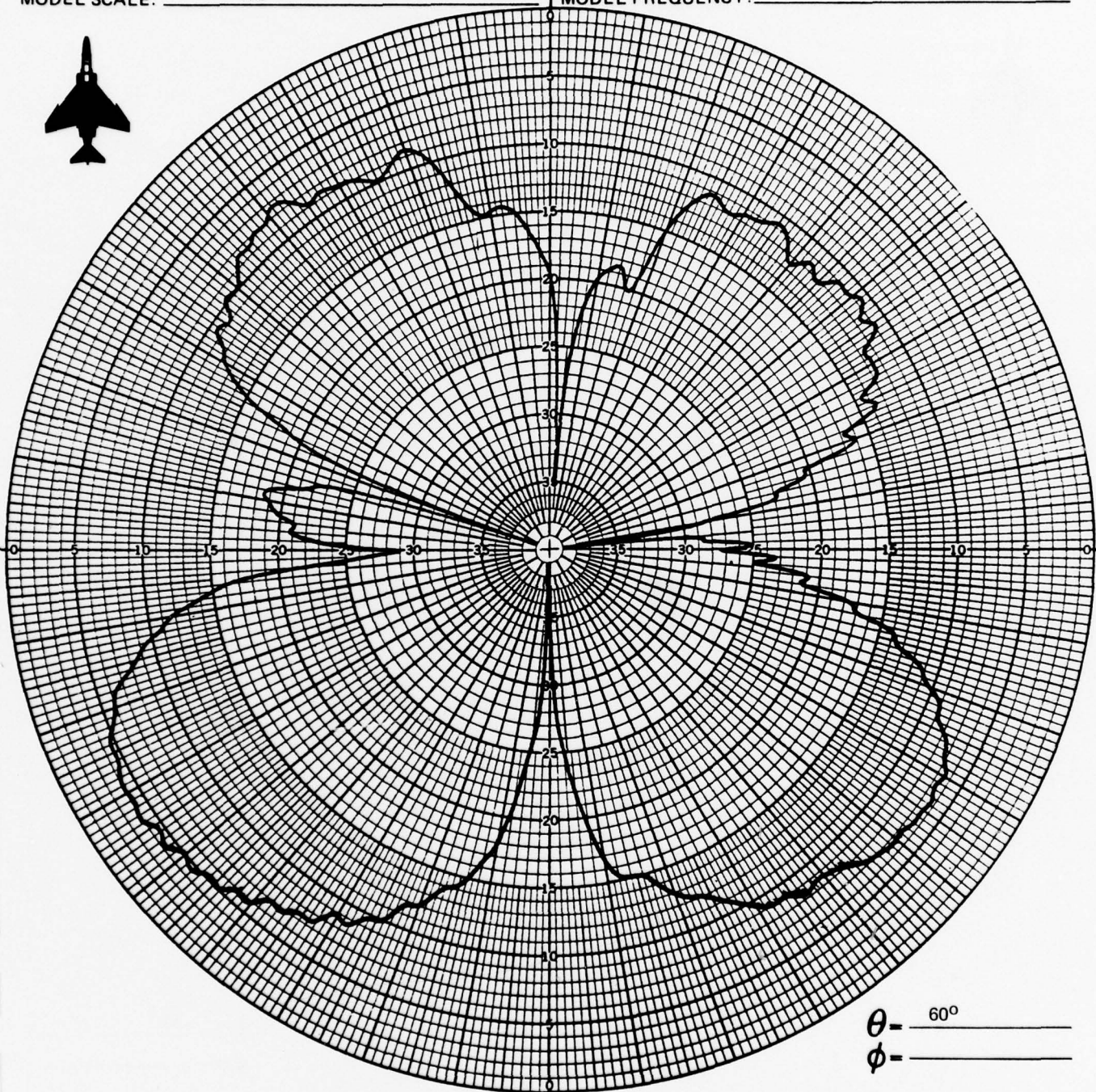
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 4-20-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 400 MHz
MODEL FREQUENCY: _____ 2000 MHz



θ = 60°
 ϕ = _____

CONFIGURATION: _____ 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

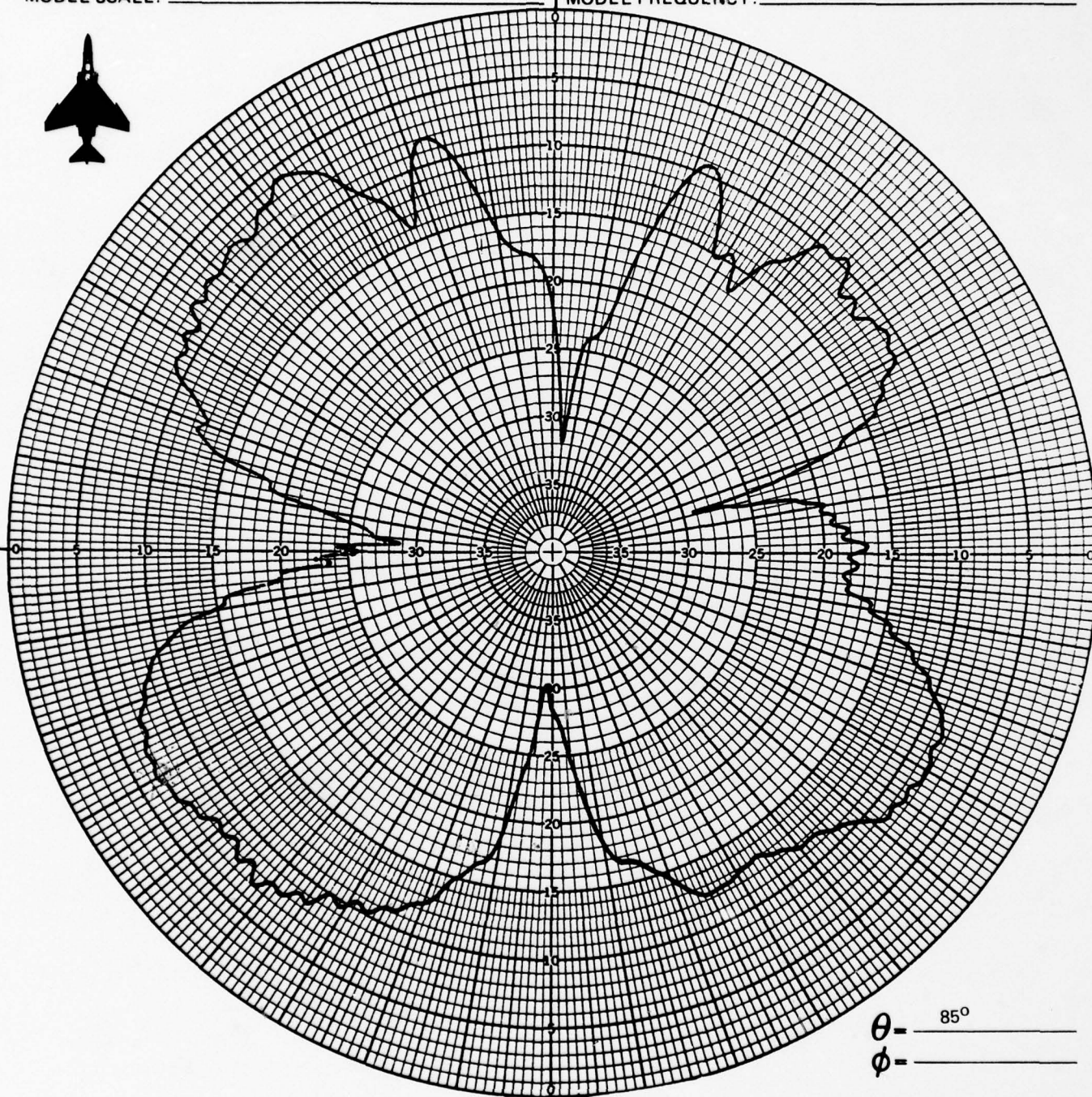
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: 4-22-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 400 MHz
MODEL FREQUENCY: _____ 2000 MHz



θ - 85°
 ϕ - _____

CONFIGURATION: _____ 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: 4-20-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE

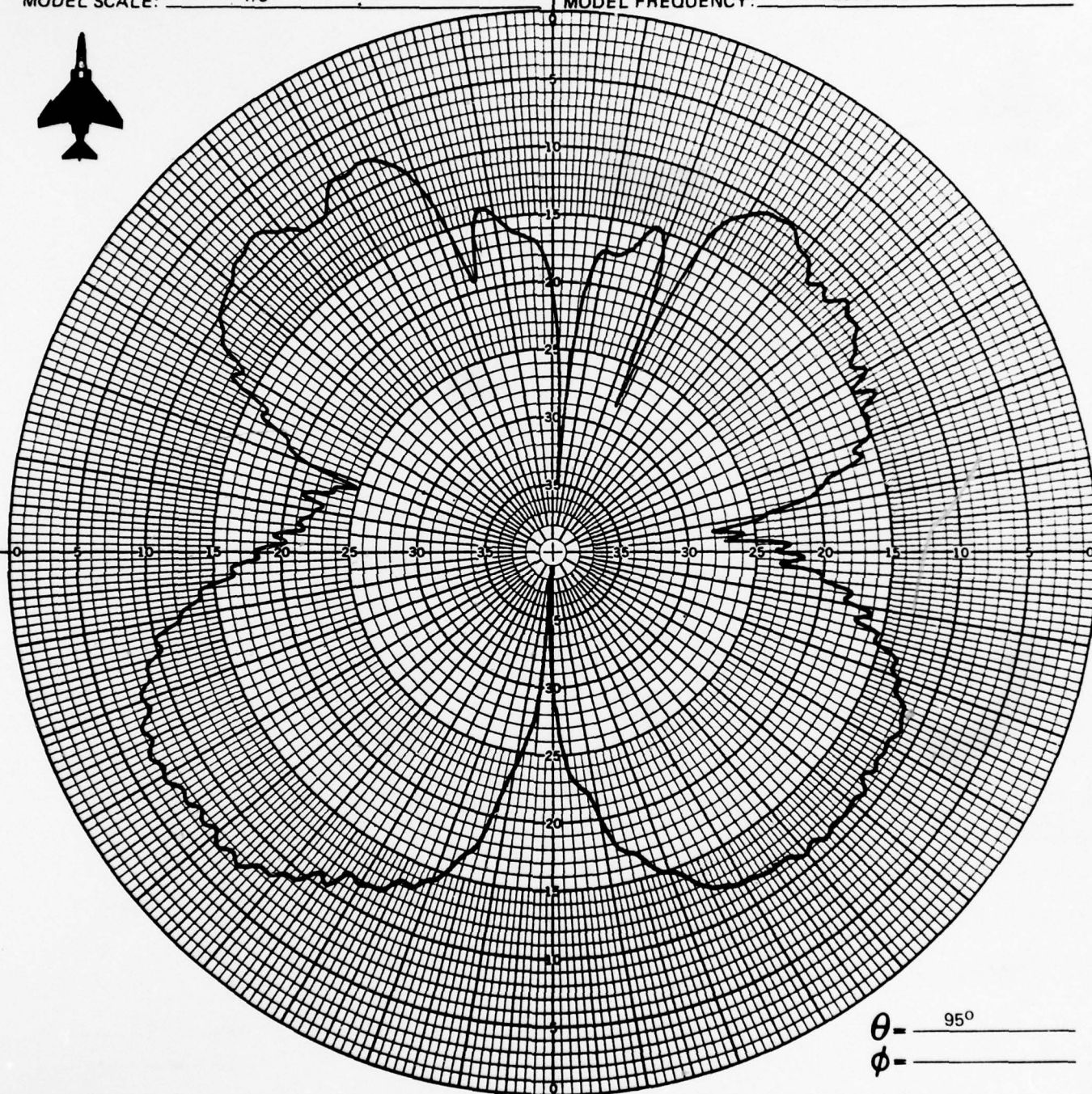
ANTENNA LOCATION: _____ FINCAP

MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)

FULL SCALE FREQUENCY: _____ 400 MHz

MODEL FREQUENCY: _____ 2000 MHz



θ - 95°
 ϕ - _____

CONFIGURATION: _____ 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

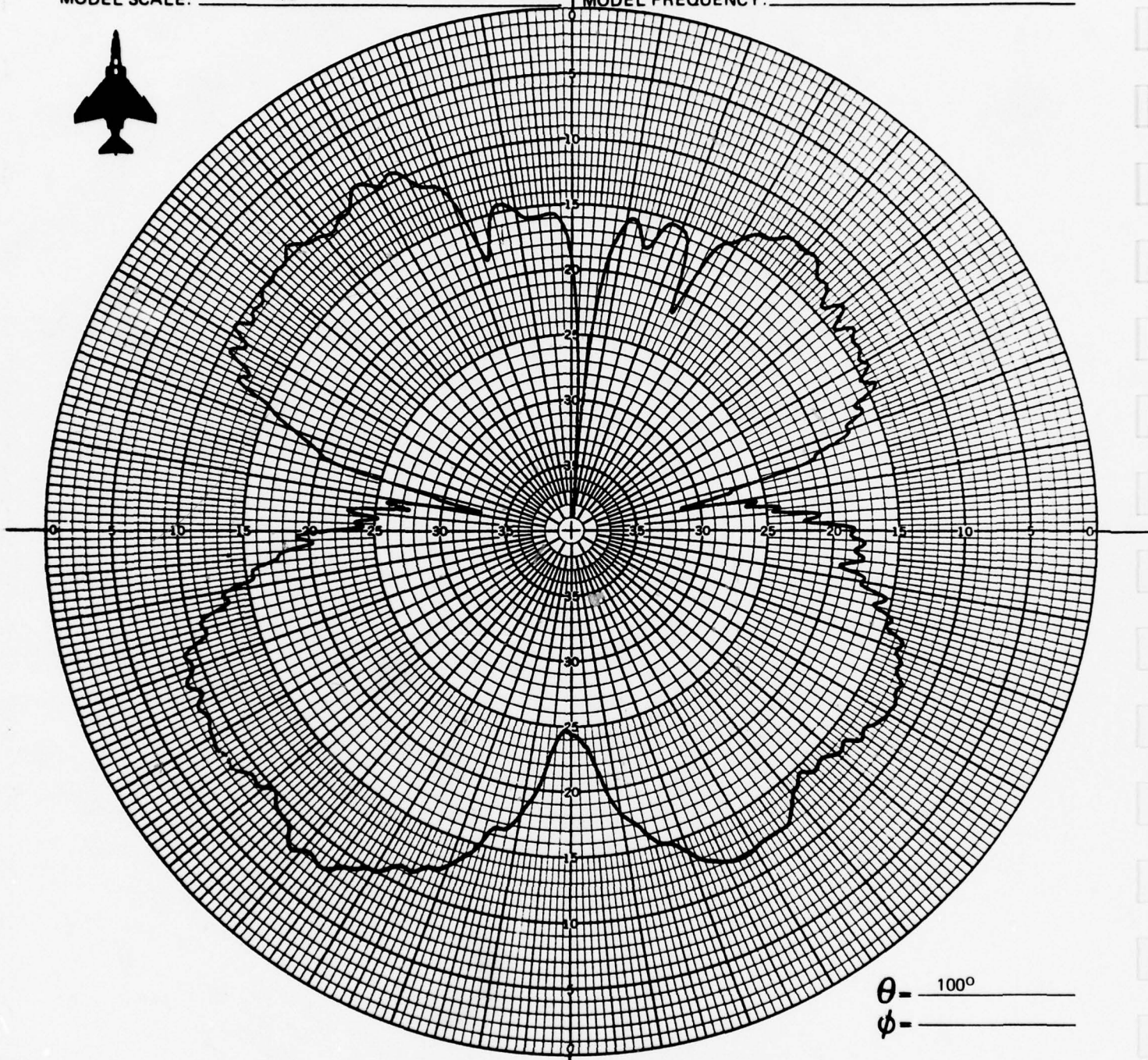
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: 4-20-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/5

TEST IDENT.: 703-174 (F-4)
FULL SCALE FREQUENCY: 400 MHz
MODEL FREQUENCY: 2000 MHz



θ - 100°
 ϕ - _____

CONFIGURATION: 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: ☐ $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

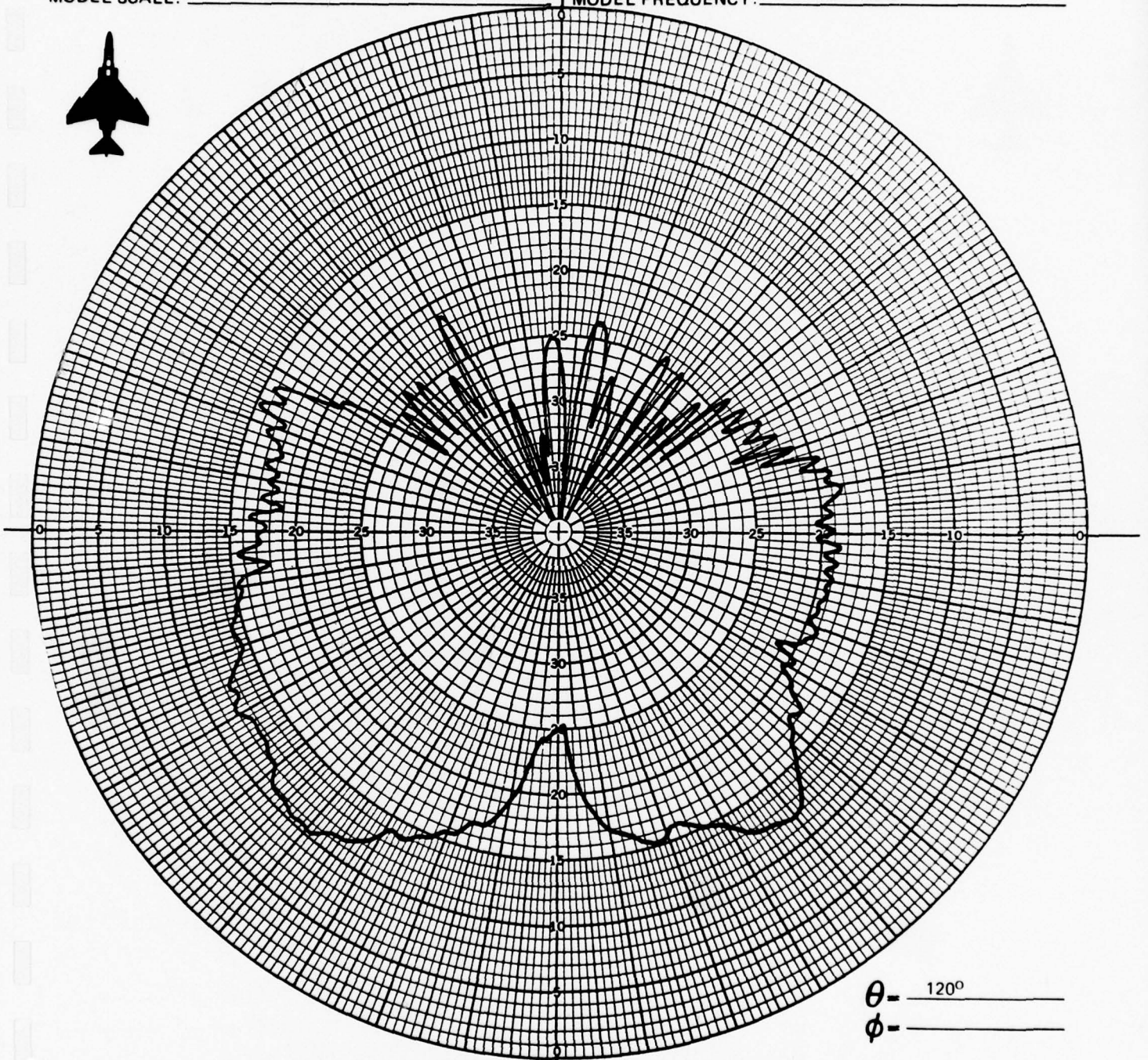
TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 4-20-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 400 MHz
MODEL FREQUENCY: _____ 2000 MHz



θ - 120°
 ϕ - _____

CONFIGURATION: _____ 29

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: E ϕ ☒ E θ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

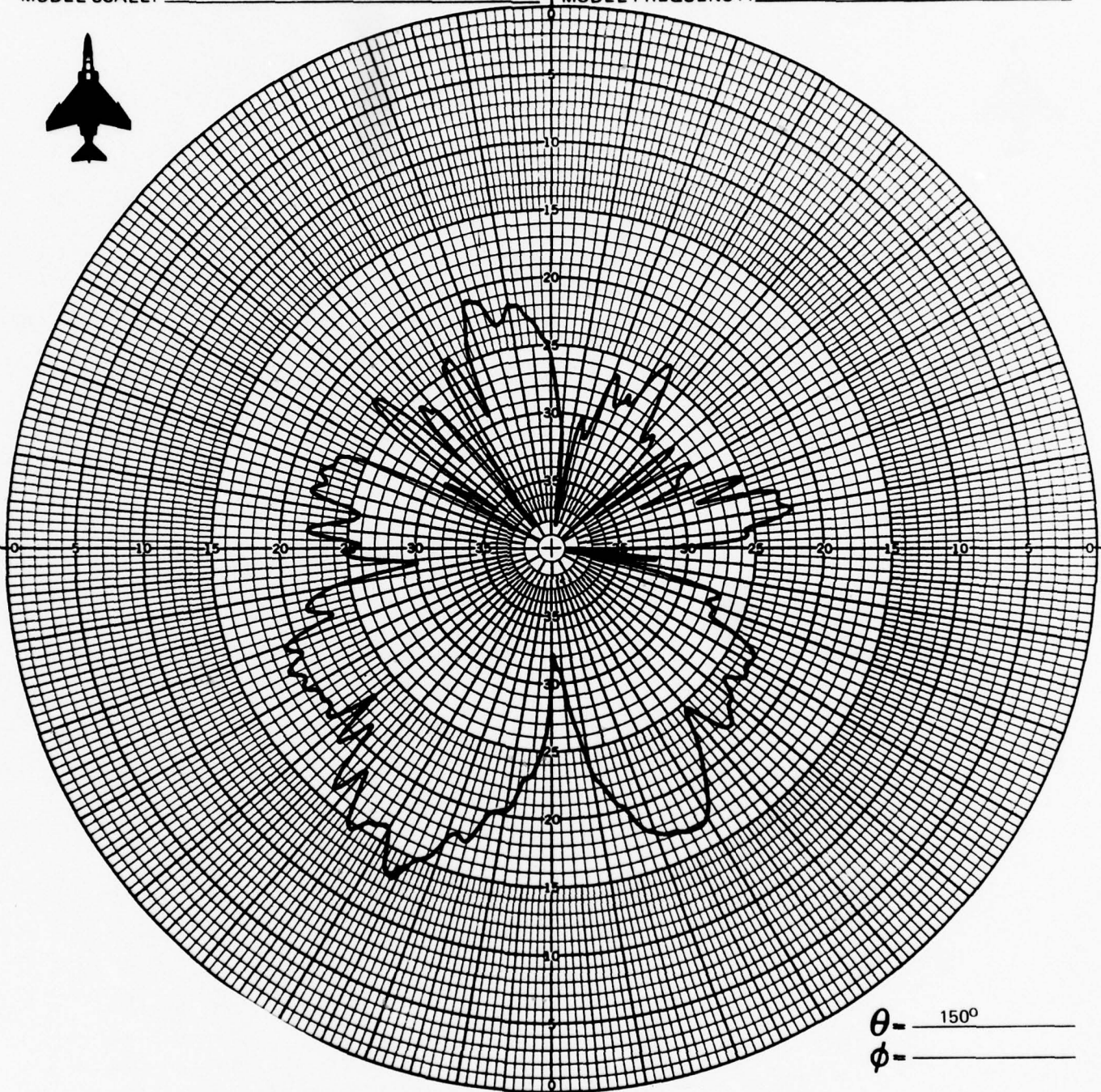
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: 4-20-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/5

TEST IDENT.: _____ 703-174 (F-4)
FULL SCALE FREQUENCY: _____ 400 MHz
MODEL FREQUENCY: _____ 2000 MHz



θ - 150°
 ϕ - _____

CONFIGURATION: _____ 29
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: 4-20-77

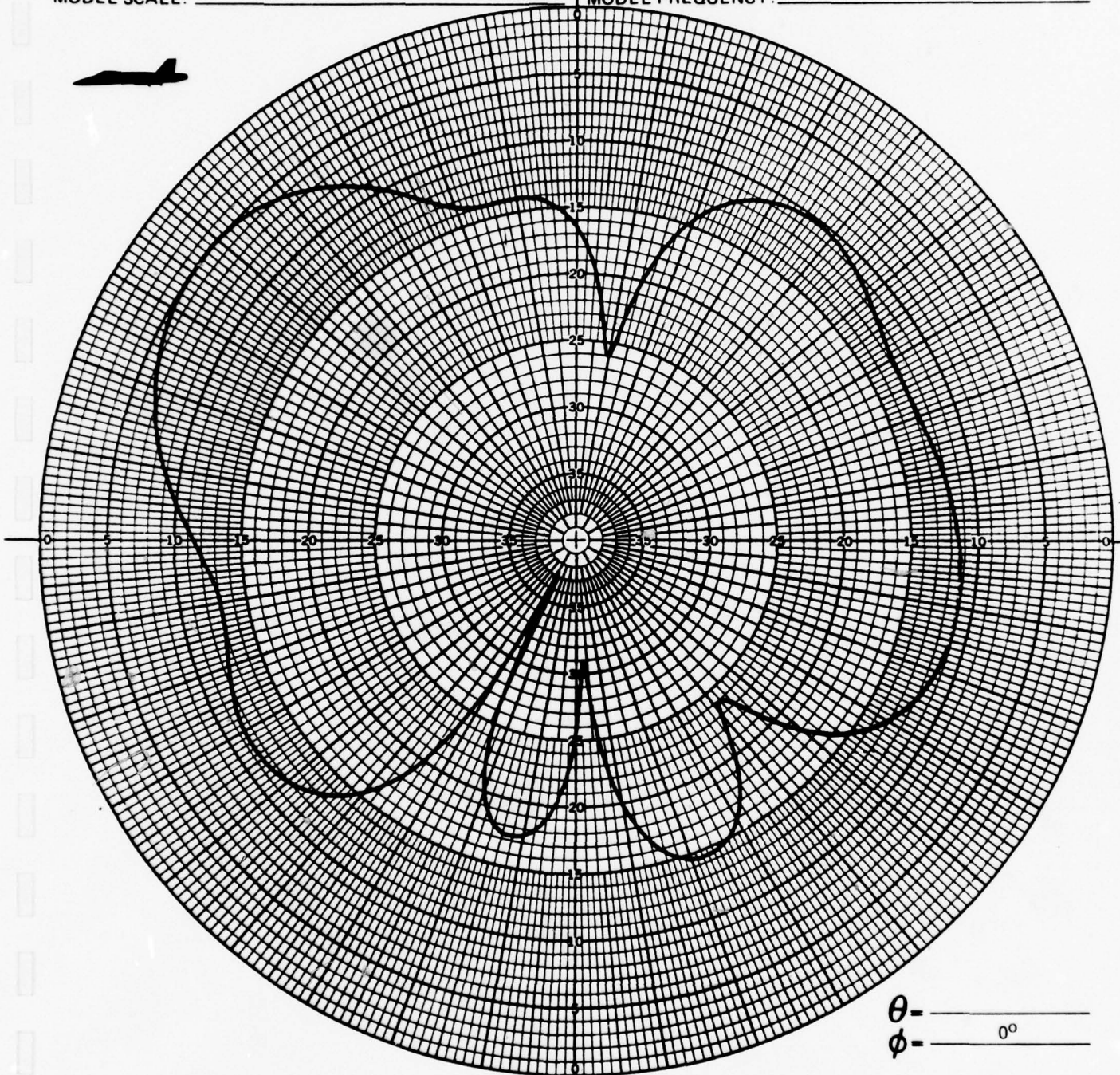
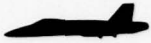
APPENDIX C

F-18 ANTENNA PATTERNS

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 30 MHz
MODEL FREQUENCY: _____ 120 MHz



θ - _____
 ϕ - _____ 0°

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

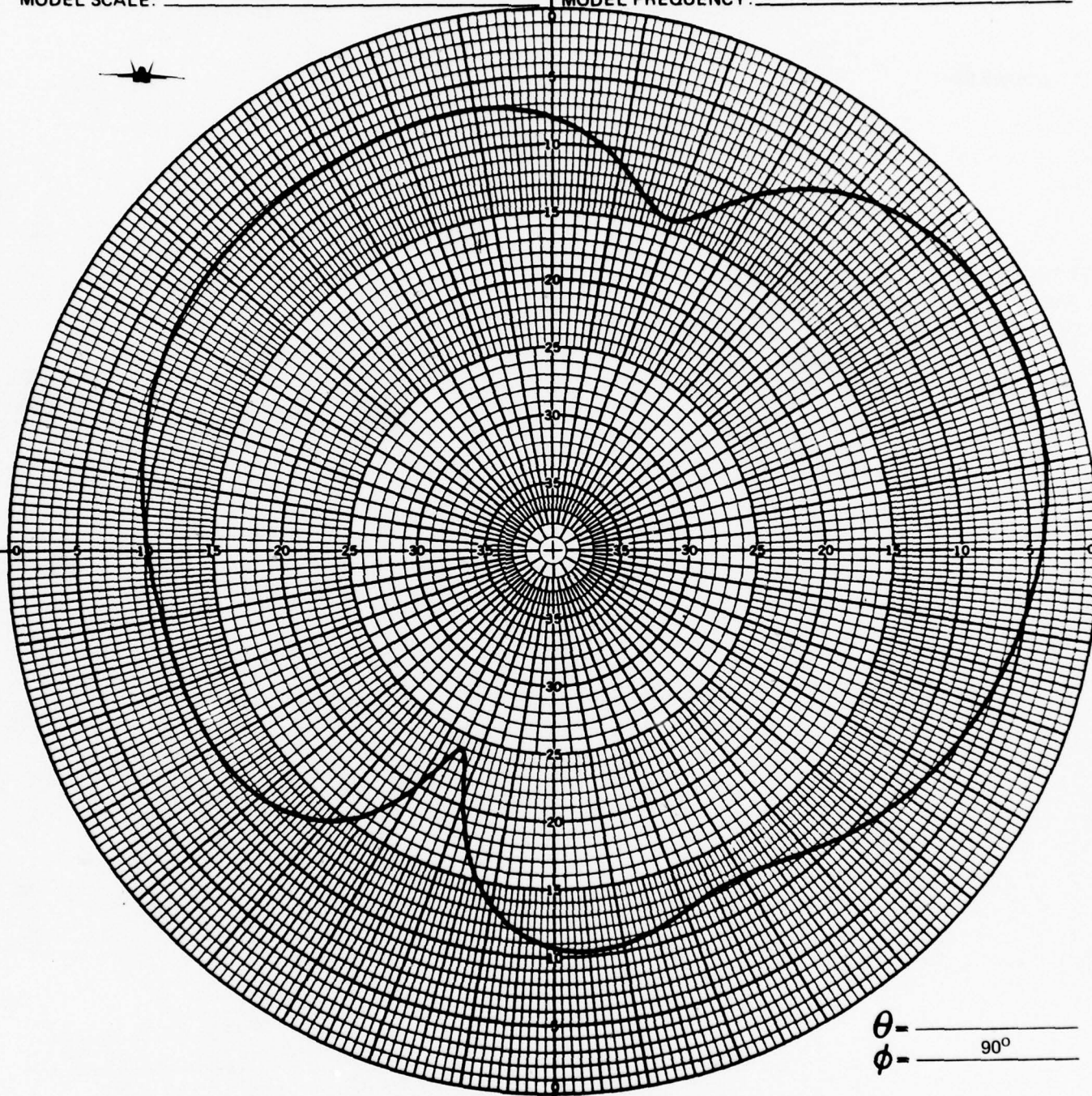
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 5-1-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 30 MHz
MODEL FREQUENCY: _____ 120 MHz



CONFIGURATION: _____ 30
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: E ϕ ☐ E θ ☒ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: _____ 5-1-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE

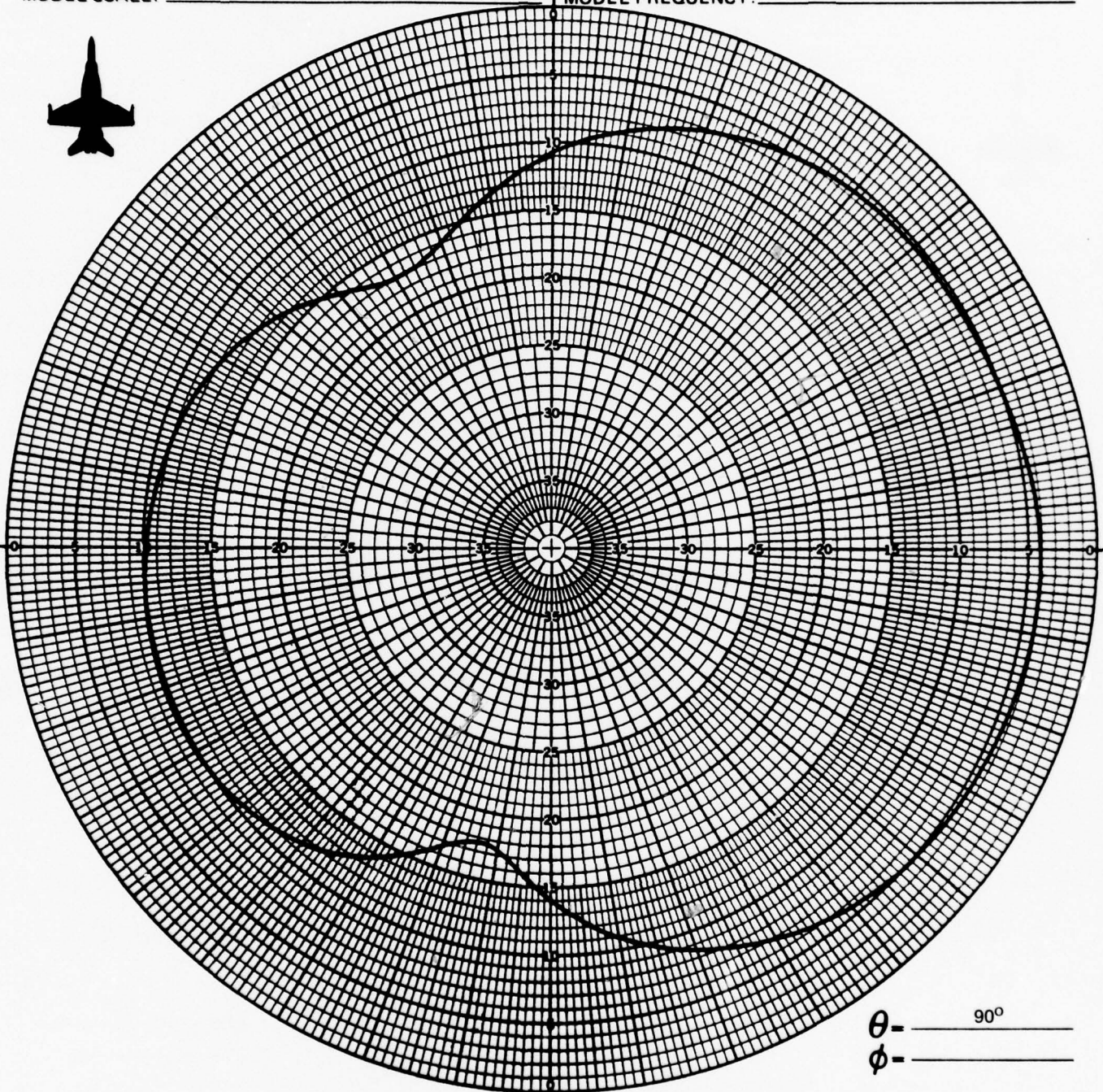
ANTENNA LOCATION: _____ FINCAP

MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)

FULL SCALE FREQUENCY: _____ 30 MHz

MODEL FREQUENCY: _____ 120 MHz



θ - _____ 90°
 ϕ - _____

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: E ϕ ☐ E θ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

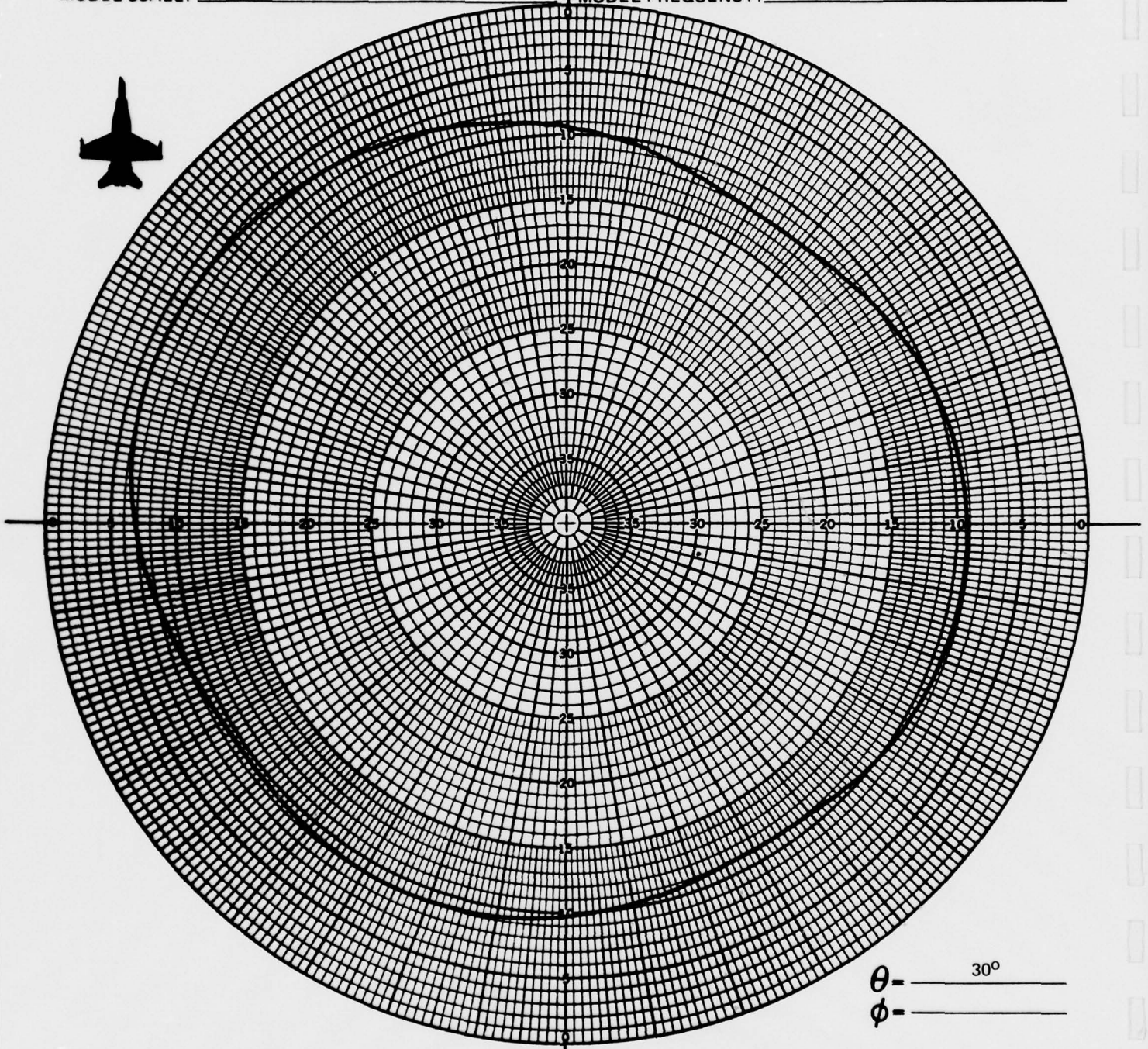
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 5-1-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 30 MHz
MODEL FREQUENCY: _____ 120 MHz



θ - _____ 30°
 ϕ - _____

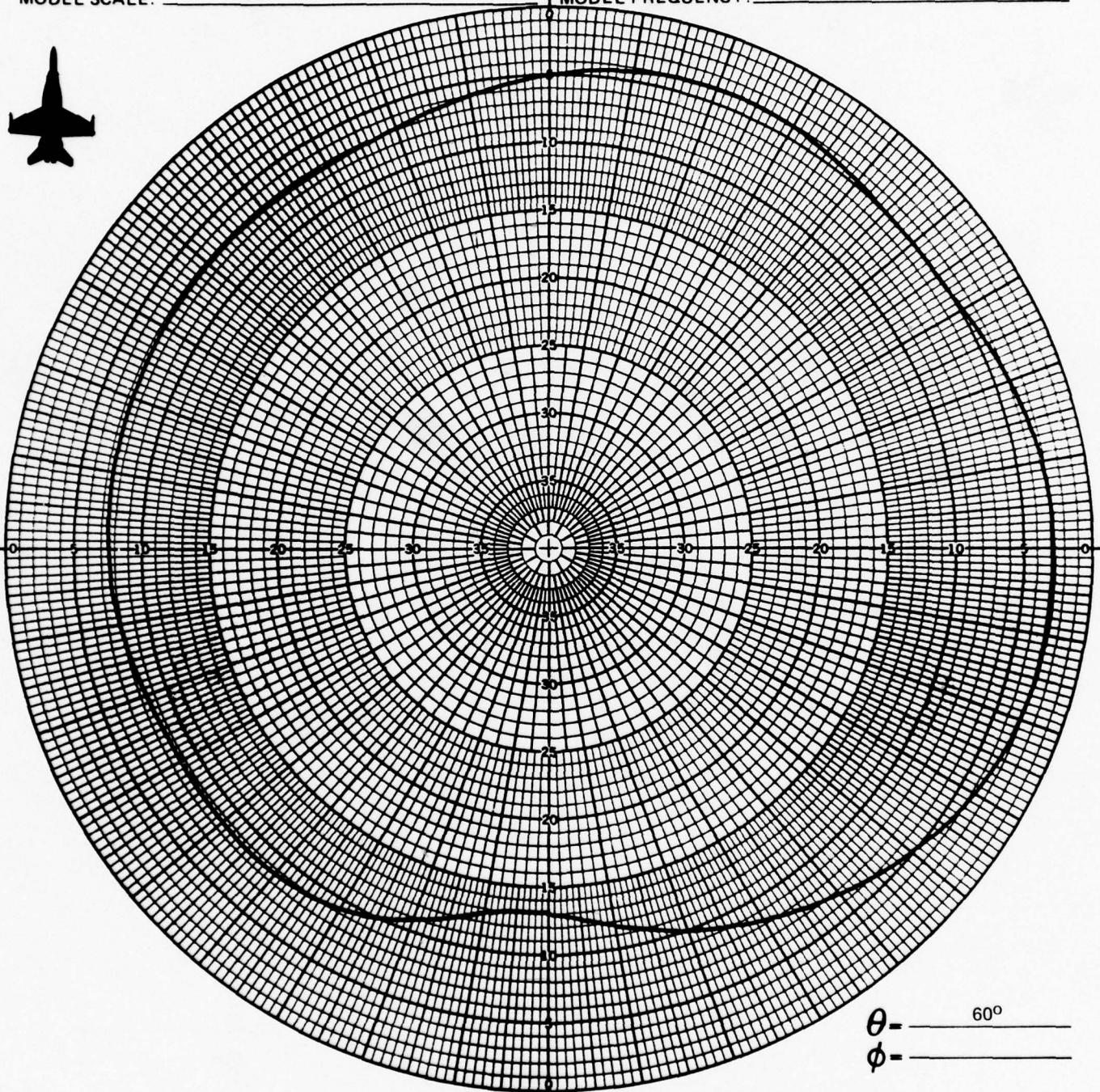
CONFIGURATION: _____ 30
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: E ϕ ☐ E θ ☒ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: _____ 5-1-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 30 MHz
MODEL FREQUENCY: _____ 120 MHz



θ - _____ 60°
 ϕ - _____

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: E ϕ ☐ E θ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

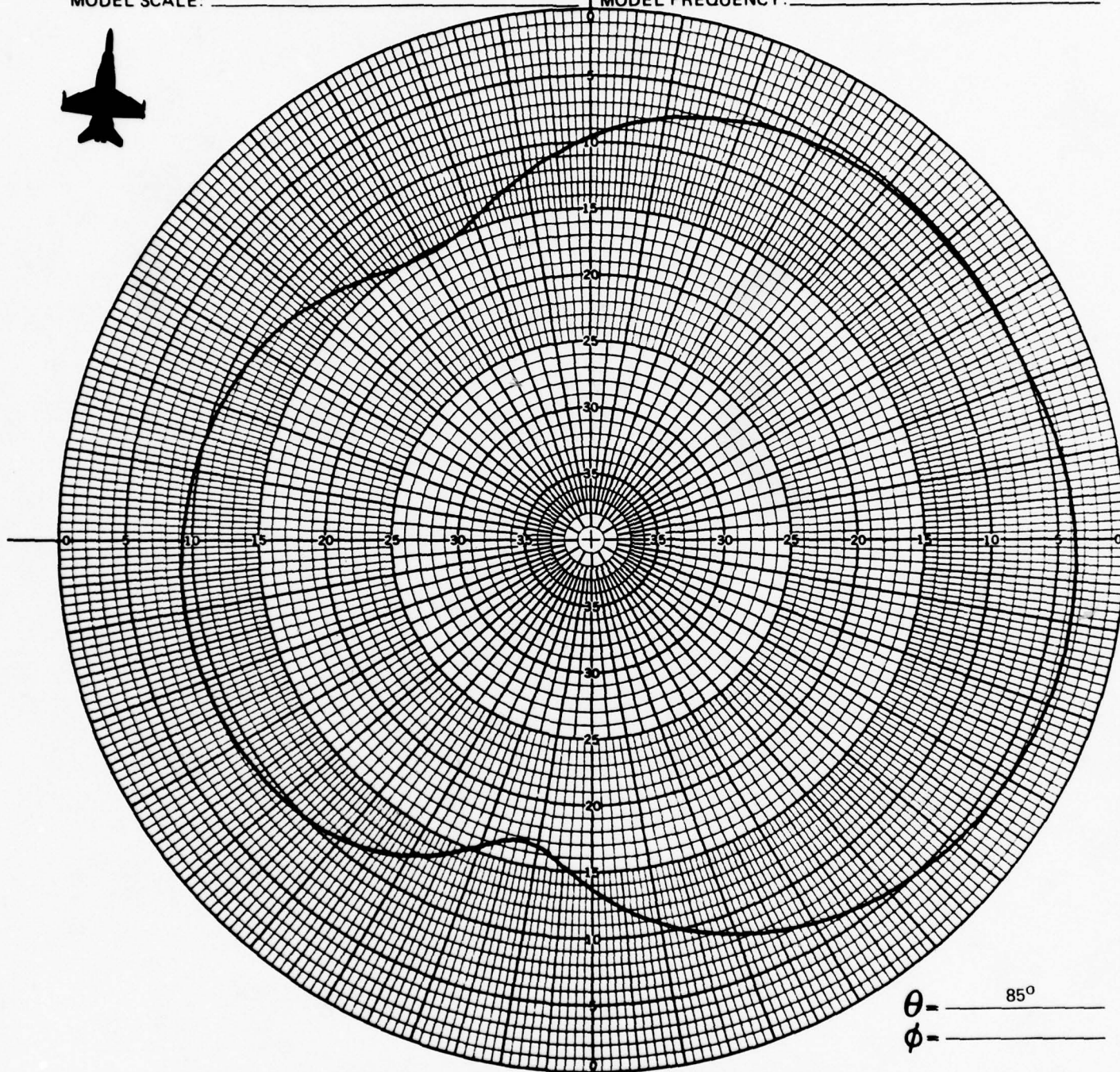
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 5-1-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 30 MHz
MODEL FREQUENCY: _____ 120 MHz



θ = _____ 85°
 ϕ = _____

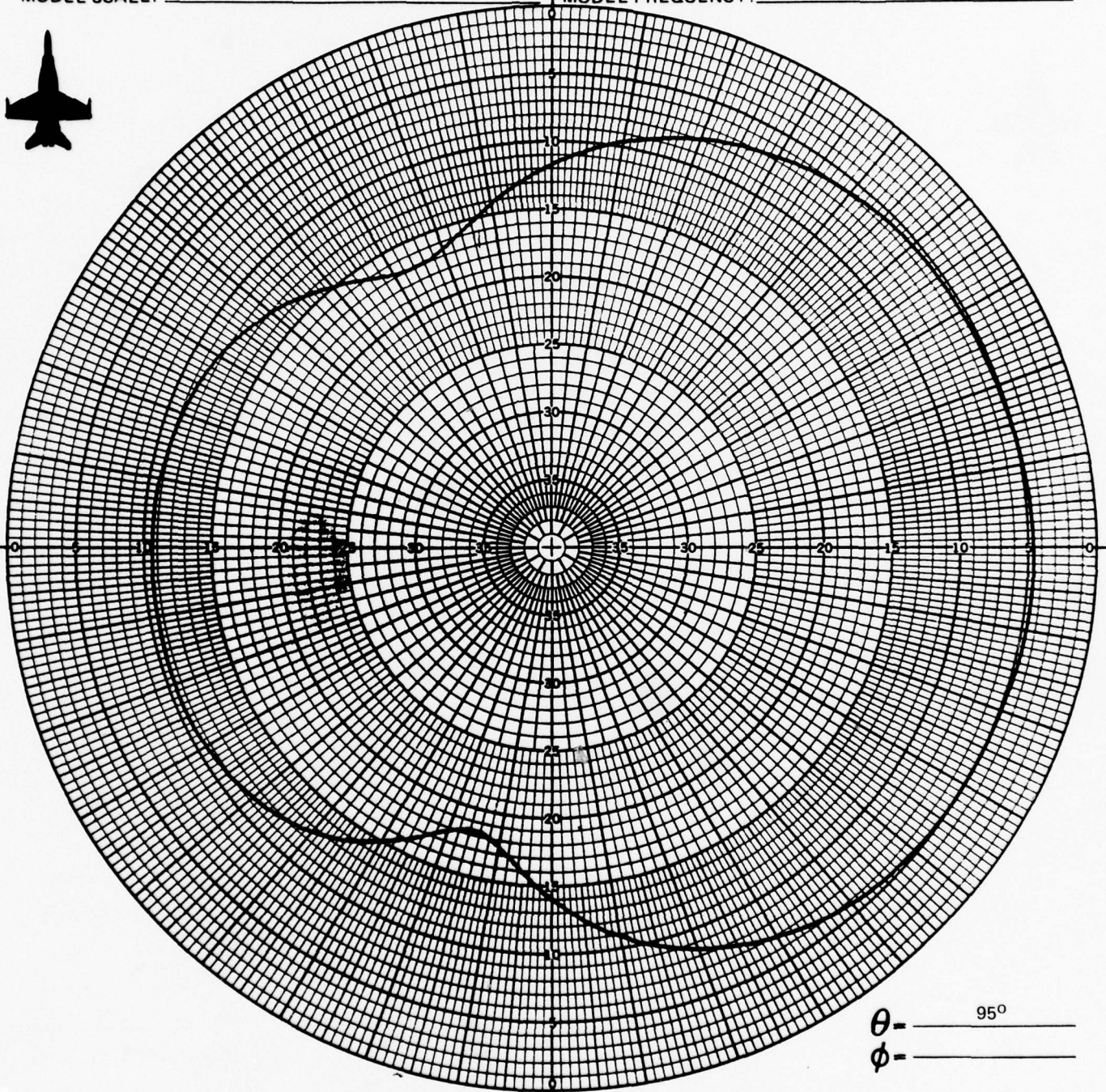
CONFIGURATION: _____ 30
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: E ϕ ☐ E θ ☒ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: _____ 5-1-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 30 MHz
MODEL FREQUENCY: _____ 120 MHz



θ - _____ 95°
 ϕ - _____

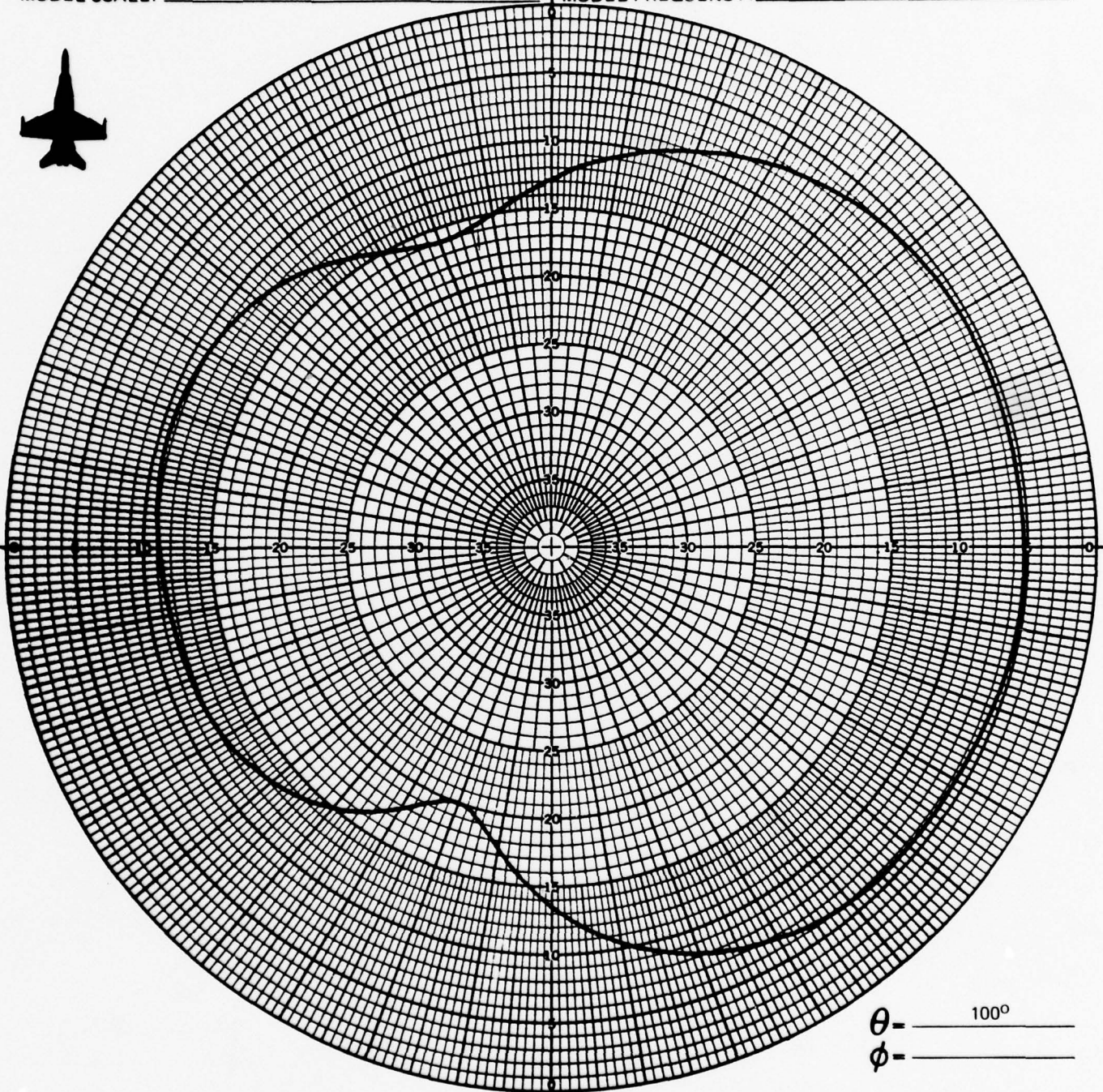
CONFIGURATION: _____ 30
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: E ϕ ☐ E θ ☒ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: _____ 5-1-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 30 MHz
MODEL FREQUENCY: _____ 120 MHz



θ = _____ 100°
 ϕ = _____

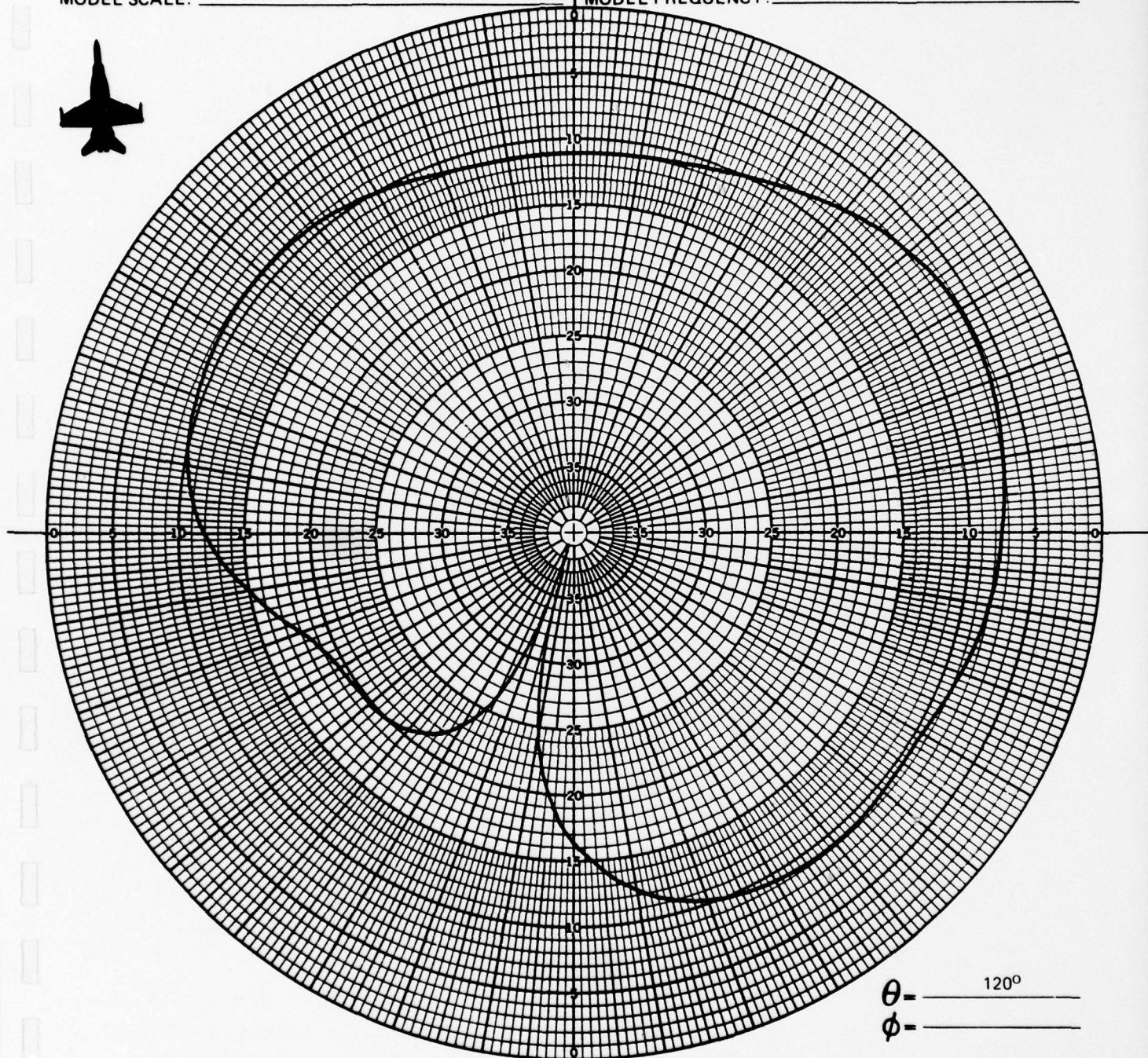
CONFIGURATION: _____ 30
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: E ϕ ☐ E θ ☒ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: _____ 5-1-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 30 MHz
MODEL FREQUENCY: _____ 120 MHz



θ = _____ 120°
 ϕ = _____

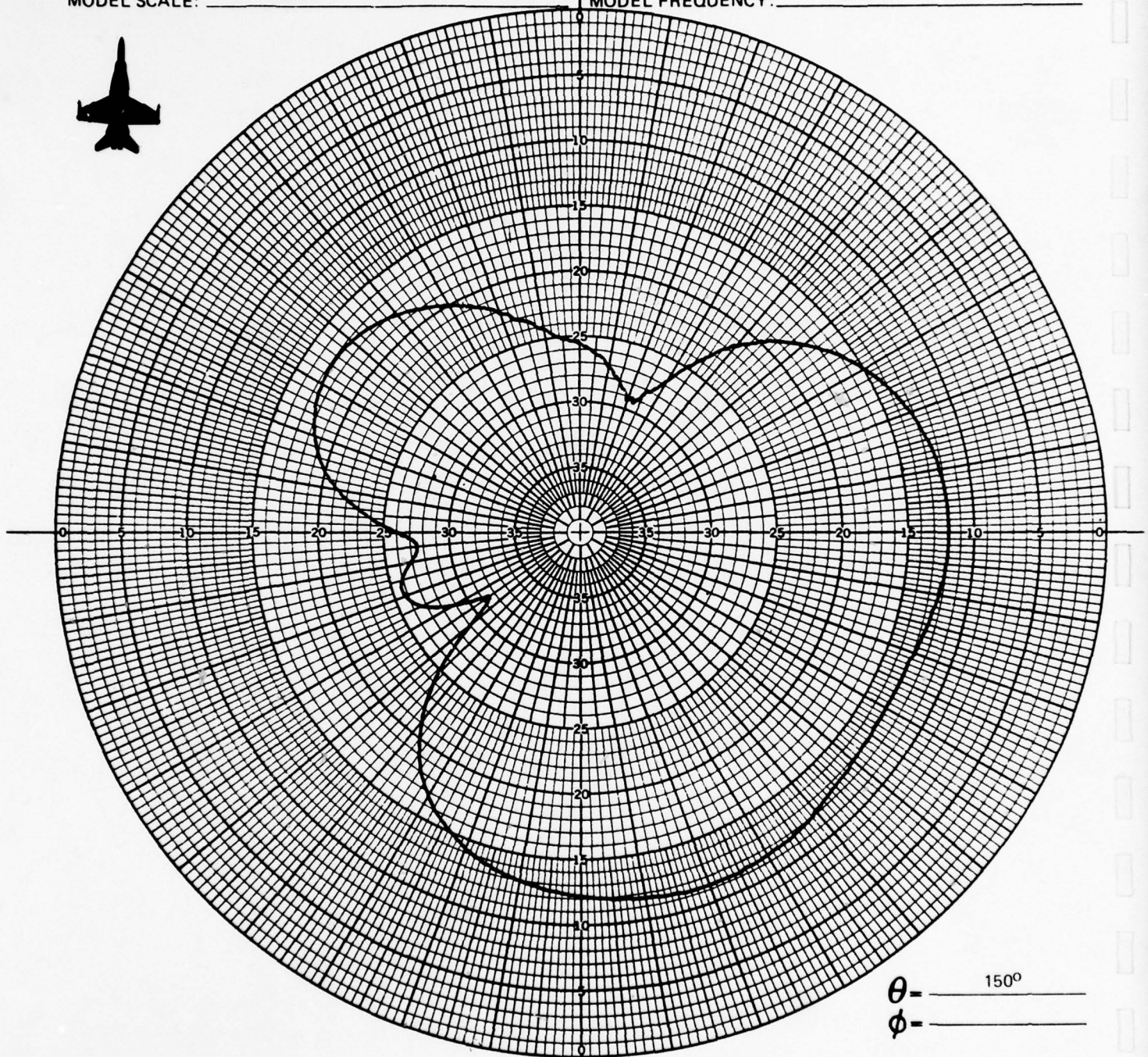
CONFIGURATION: _____ 30
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: E ϕ ☐ E θ ☒ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: _____ 5-1-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 30 MHz
MODEL FREQUENCY: _____ 120 MHz



θ = _____ 150°
 ϕ = _____

CONFIGURATION: _____ 30
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: E ϕ ☐ E θ ☒ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: _____ 5-1-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE

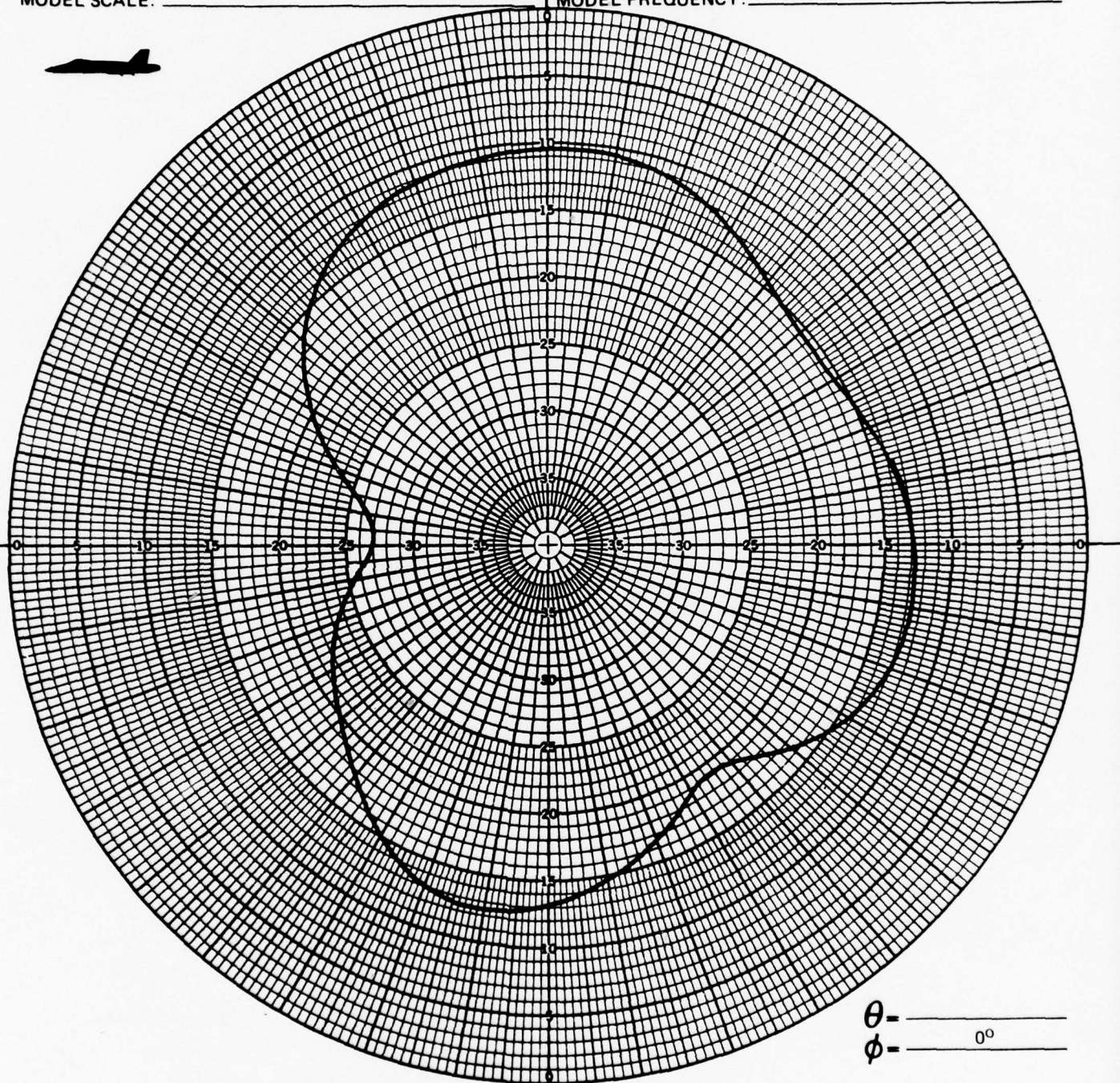
TEST IDENT.: _____ 703-174 (F-18)

ANTENNA LOCATION: _____ FINCAP

FULL SCALE FREQUENCY: _____ 30 MHz

MODEL SCALE: _____ 1/4

MODEL FREQUENCY: _____ 120 MHz



θ = _____
 ϕ = _____ 0°

CONFIGURATION: _____ 30

INTEGRATOR COUNT: _____

REMARKS: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

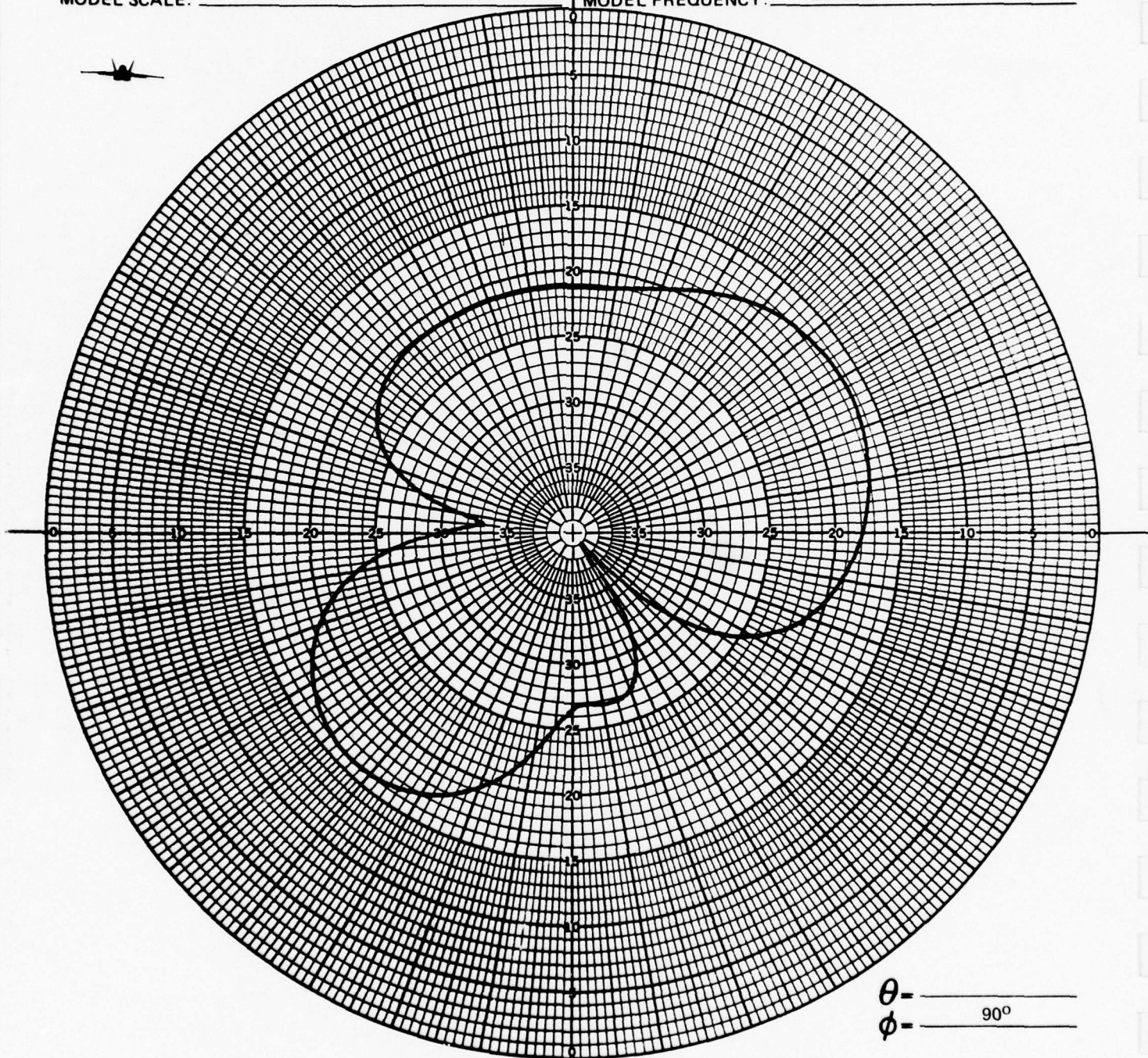
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM _____ DATE: _____ 5-1-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 30 MHz
MODEL FREQUENCY: _____ 120 MHz



θ - _____
 ϕ - _____ 90°

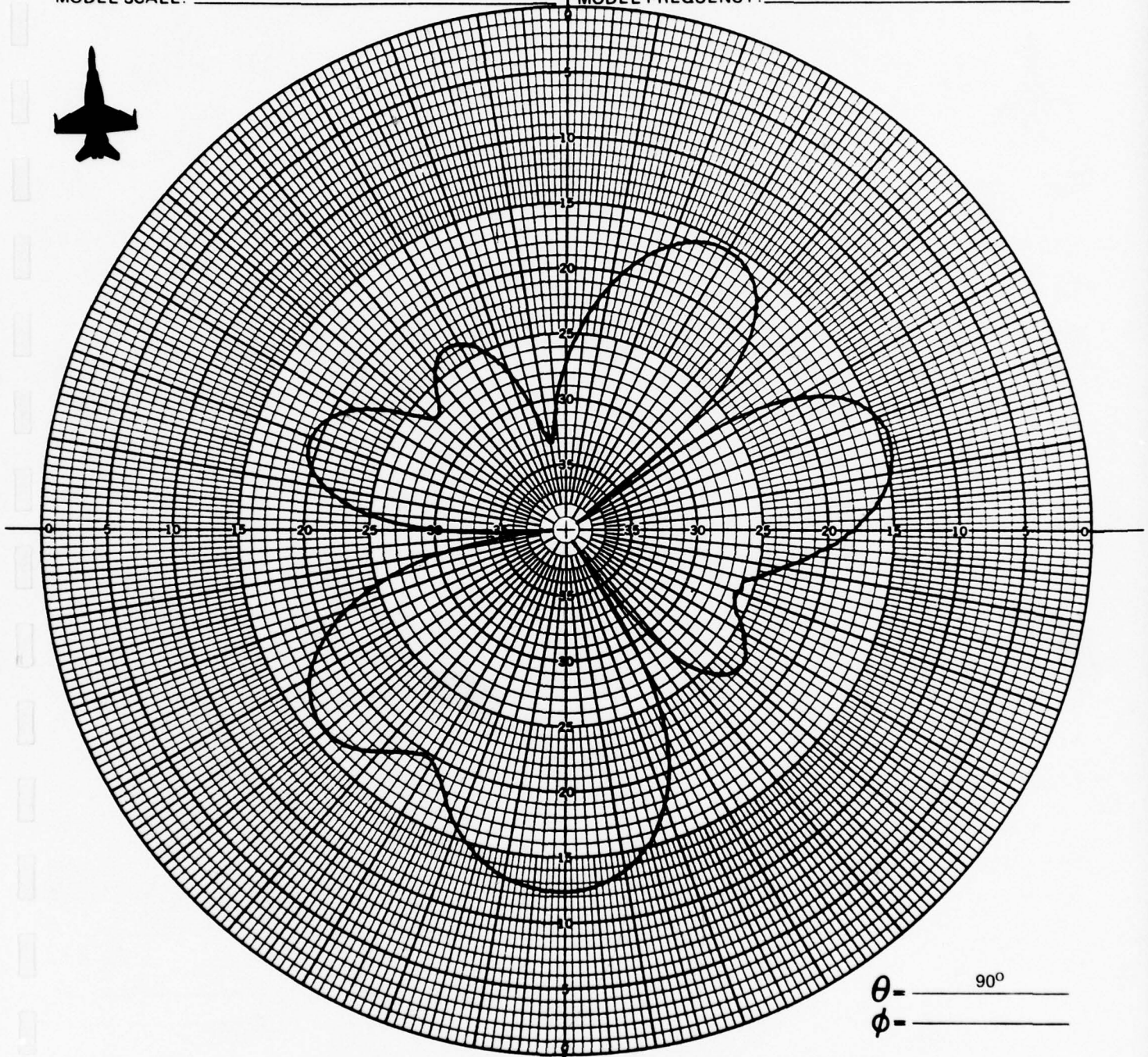
CONFIGURATION: _____ 30
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: E ☒ ϕ ☐ E θ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: _____ 5-1-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 30 MHz
MODEL FREQUENCY: _____ 120 MHz



θ - _____ 90°
 ϕ - _____

CONFIGURATION: _____ 30
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: _____ 5-1-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE

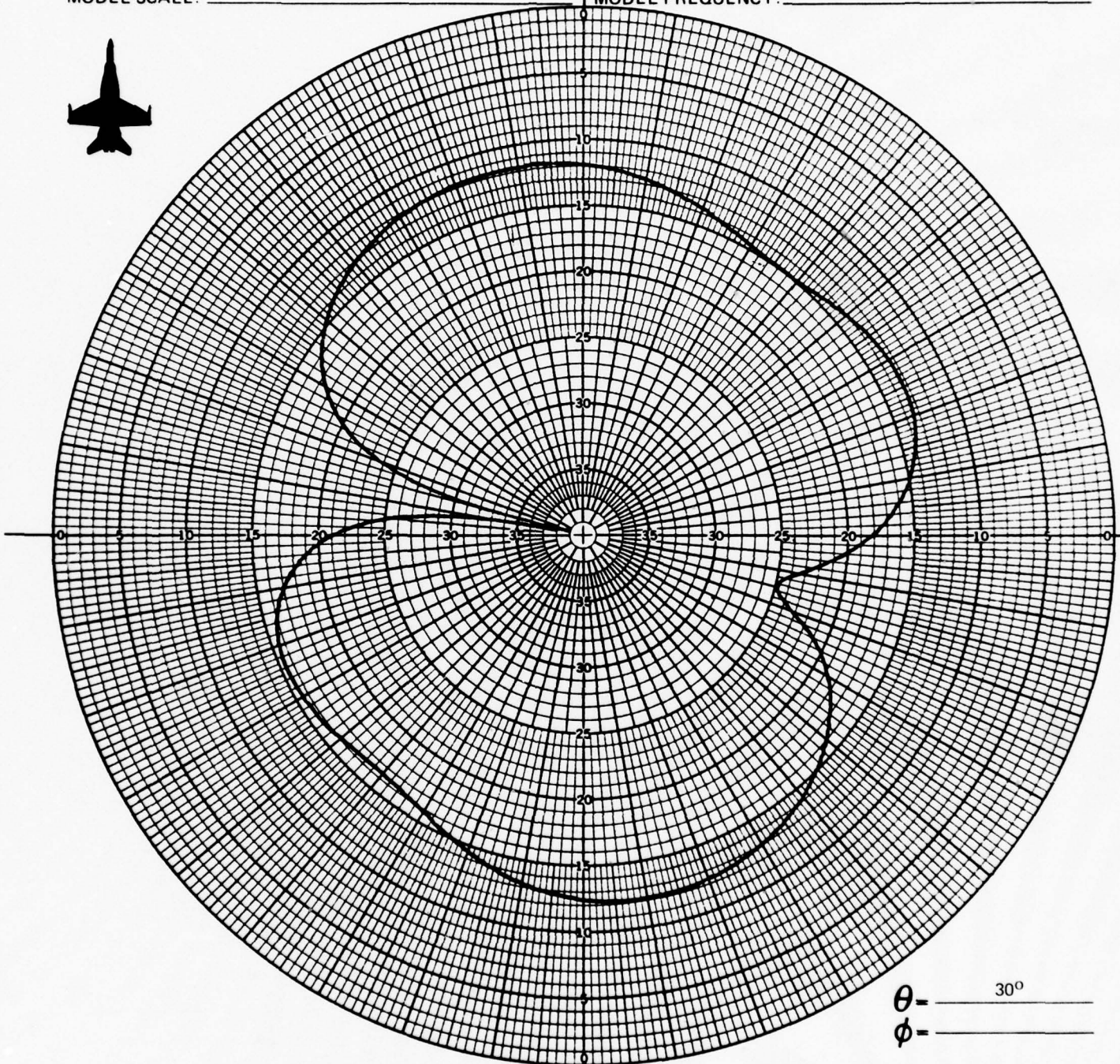
ANTENNA LOCATION: _____ FINCAP

MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)

FULL SCALE FREQUENCY: _____ 30 MHz

MODEL FREQUENCY: _____ 120 MHz



θ = _____ 30°
 ϕ = _____

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

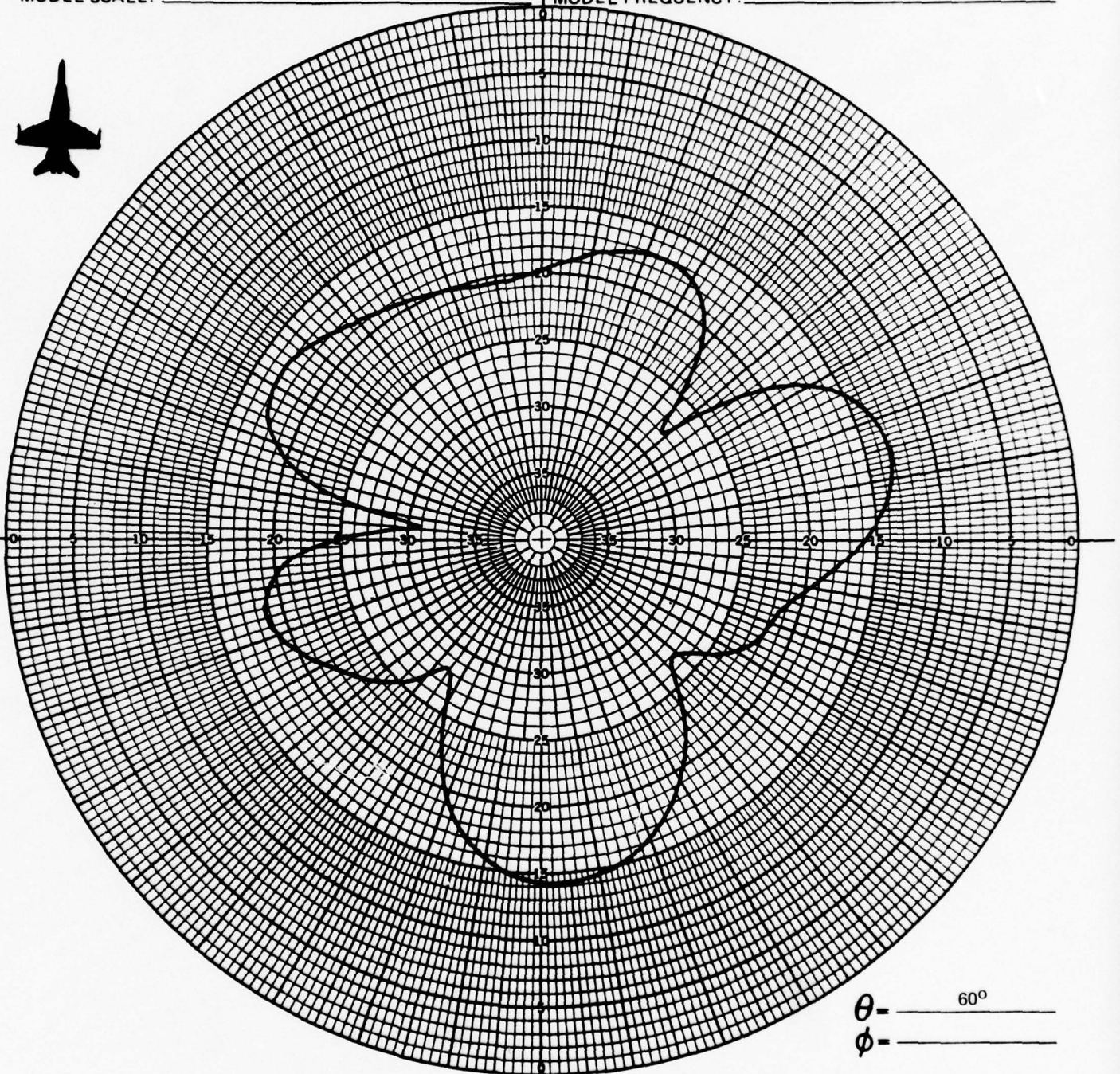
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 5-1-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 30 MHz
MODEL FREQUENCY: _____ 120 MHz



θ = _____ 60°
 ϕ = _____

CONFIGURATION: _____ 30

INTEGRATOR COUNT: _____

REMARKS: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 5-1-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE

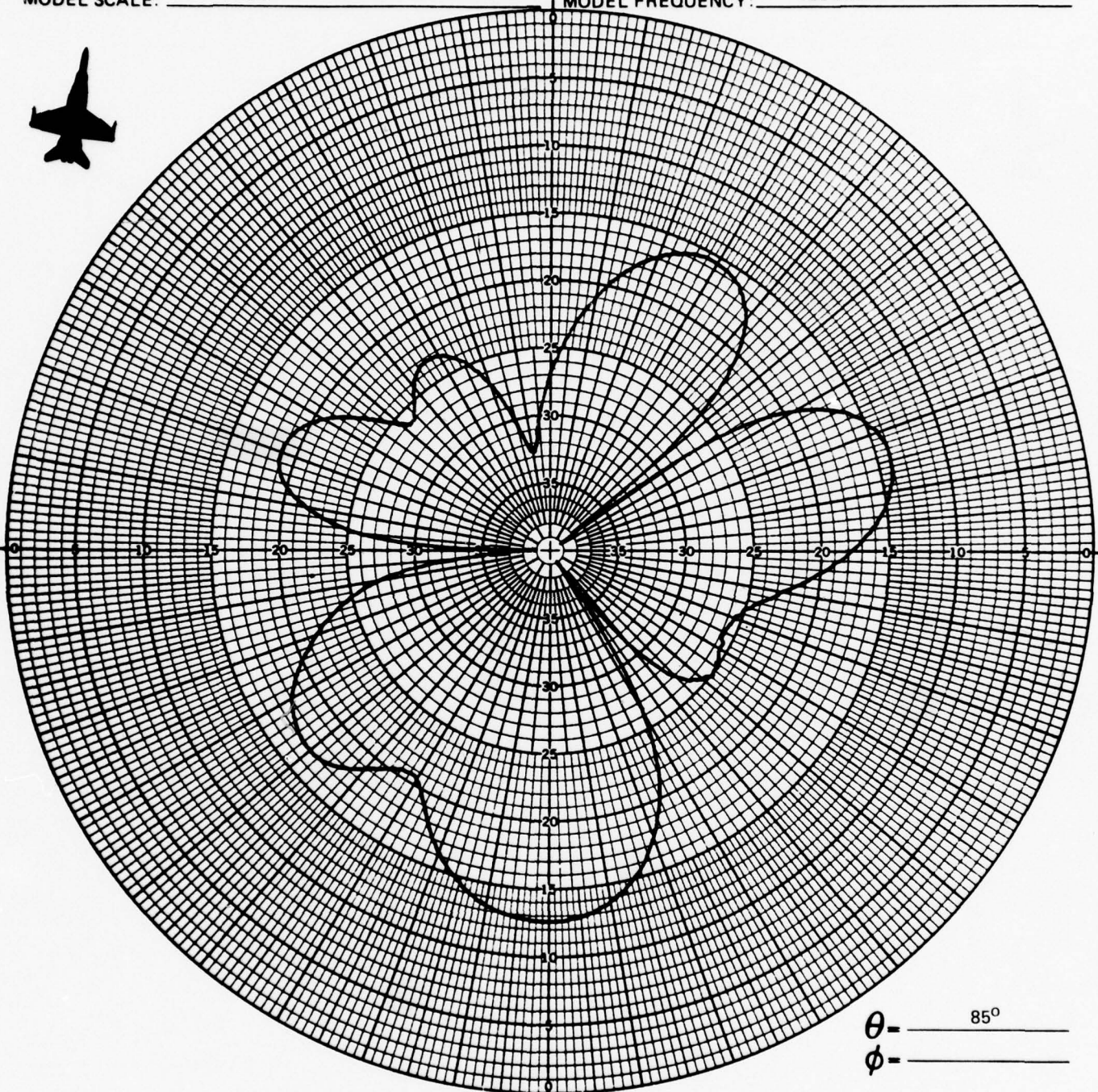
ANTENNA LOCATION: _____ FINCAP

MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)

FULL SCALE FREQUENCY: _____ 30 MHz

MODEL FREQUENCY: _____ 120 MHz



θ = _____ 85°
 ϕ = _____

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 5-1-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE

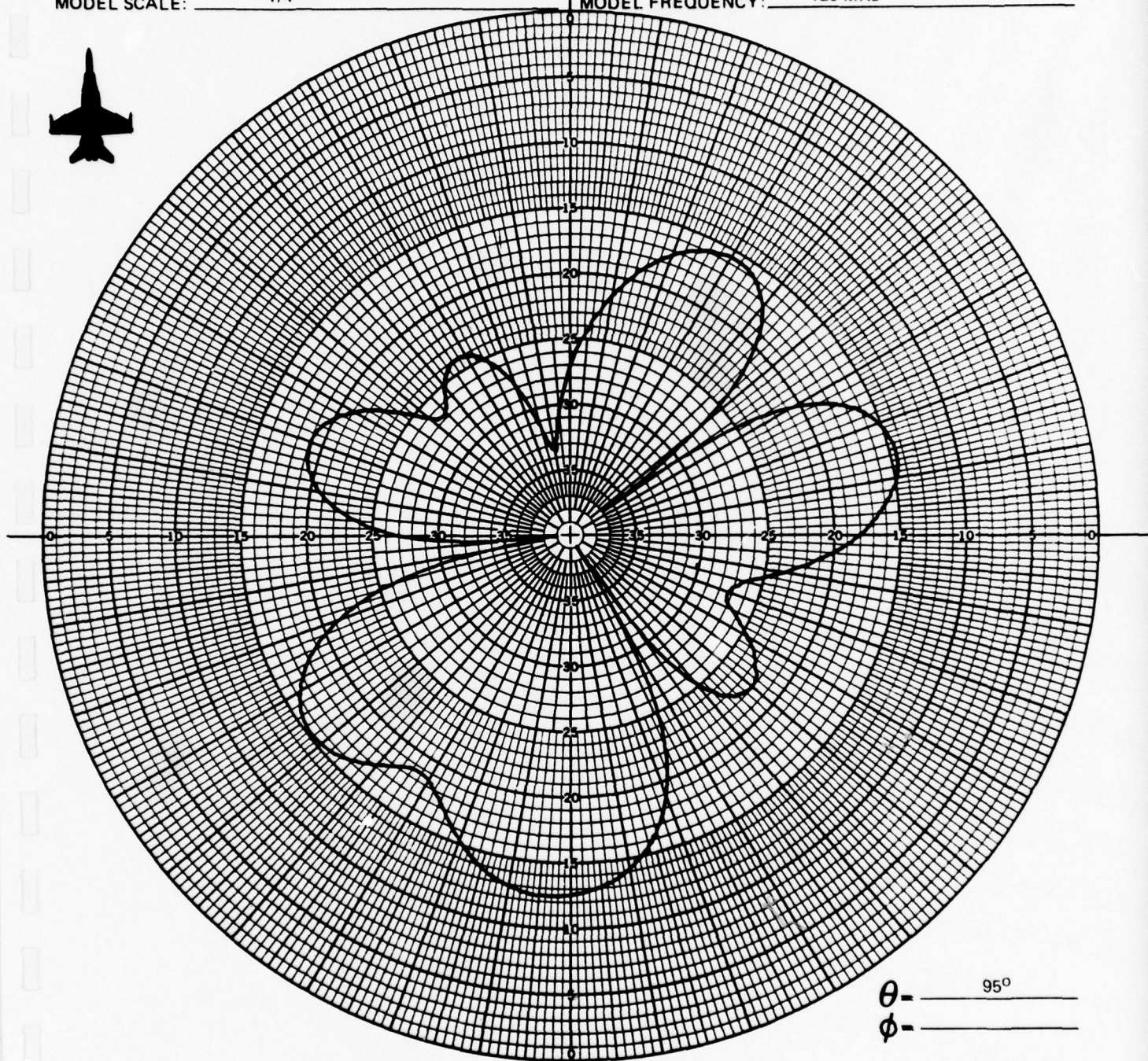
ANTENNA LOCATION: _____ FINCAP

MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)

FULL SCALE FREQUENCY: _____ 30 MHz

MODEL FREQUENCY: _____ 120 MHz



θ - _____ 95°
 ϕ - _____

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: E ☒ ϕ ☐ E θ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

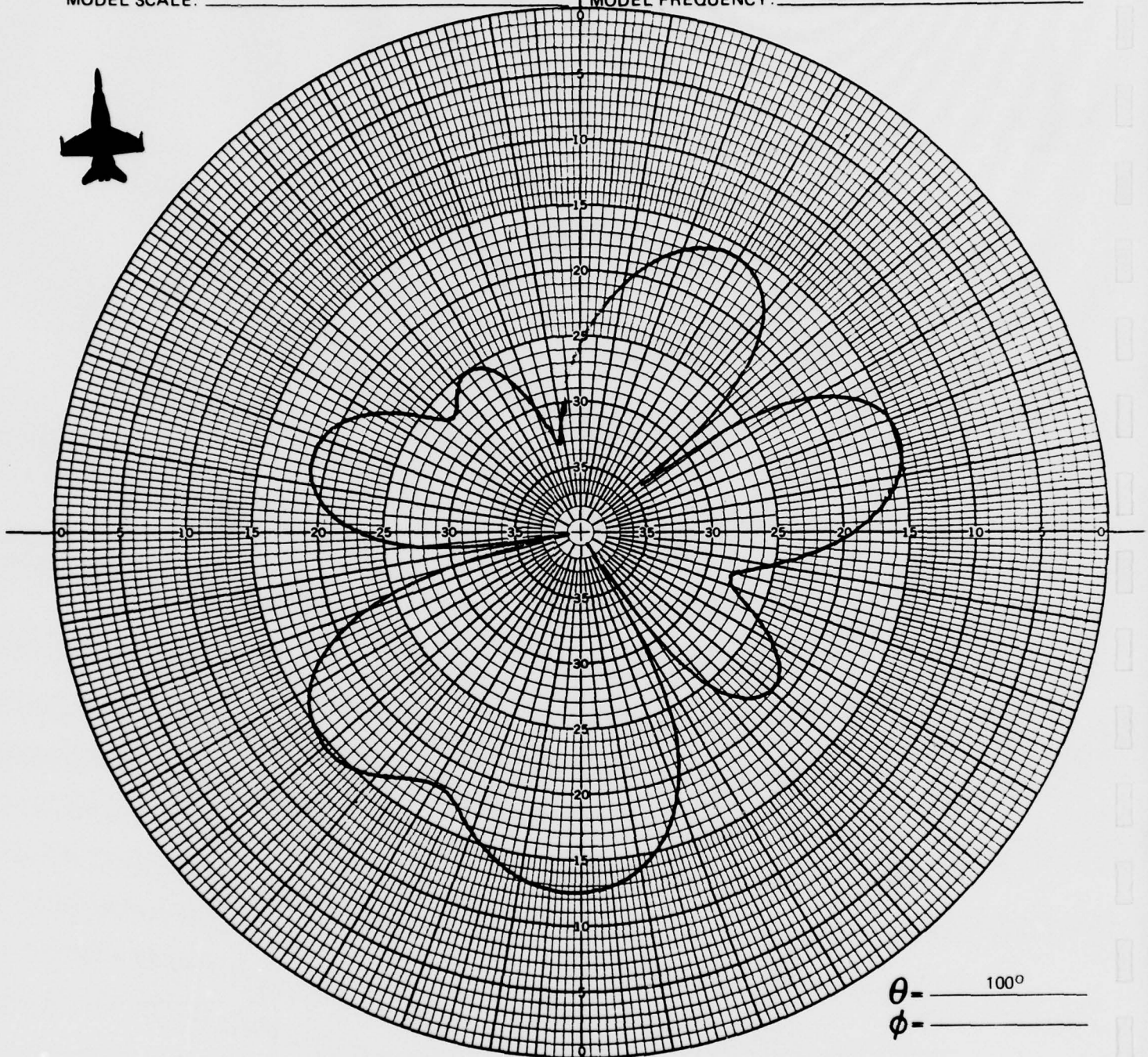
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 5-1-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 30 MHz
MODEL FREQUENCY: _____ 120 MHz



θ - _____ 100°
 ϕ - _____

CONFIGURATION: _____ 30
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: _____ 5-1-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE

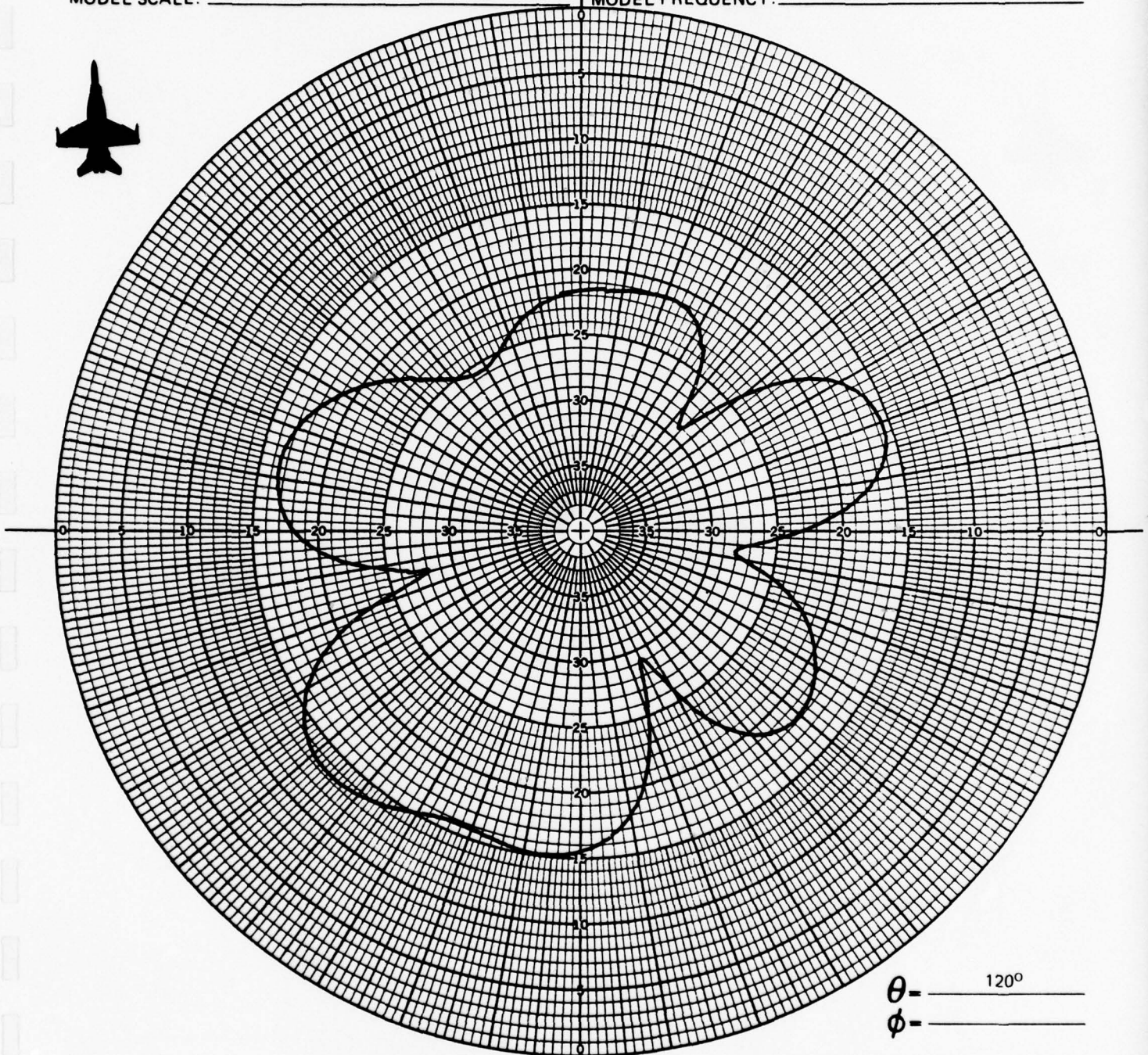
TEST IDENT.: _____ 703-174 (F-18)

ANTENNA LOCATION: _____ FINCAP

FULL SCALE FREQUENCY: _____ 30 MHz

MODEL SCALE: _____ 1/4

MODEL FREQUENCY: _____ 120 MHz



θ = _____ 120°
 ϕ = _____

CONFIGURATION: _____ 30

INTEGRATOR COUNT: _____

REMARKS: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

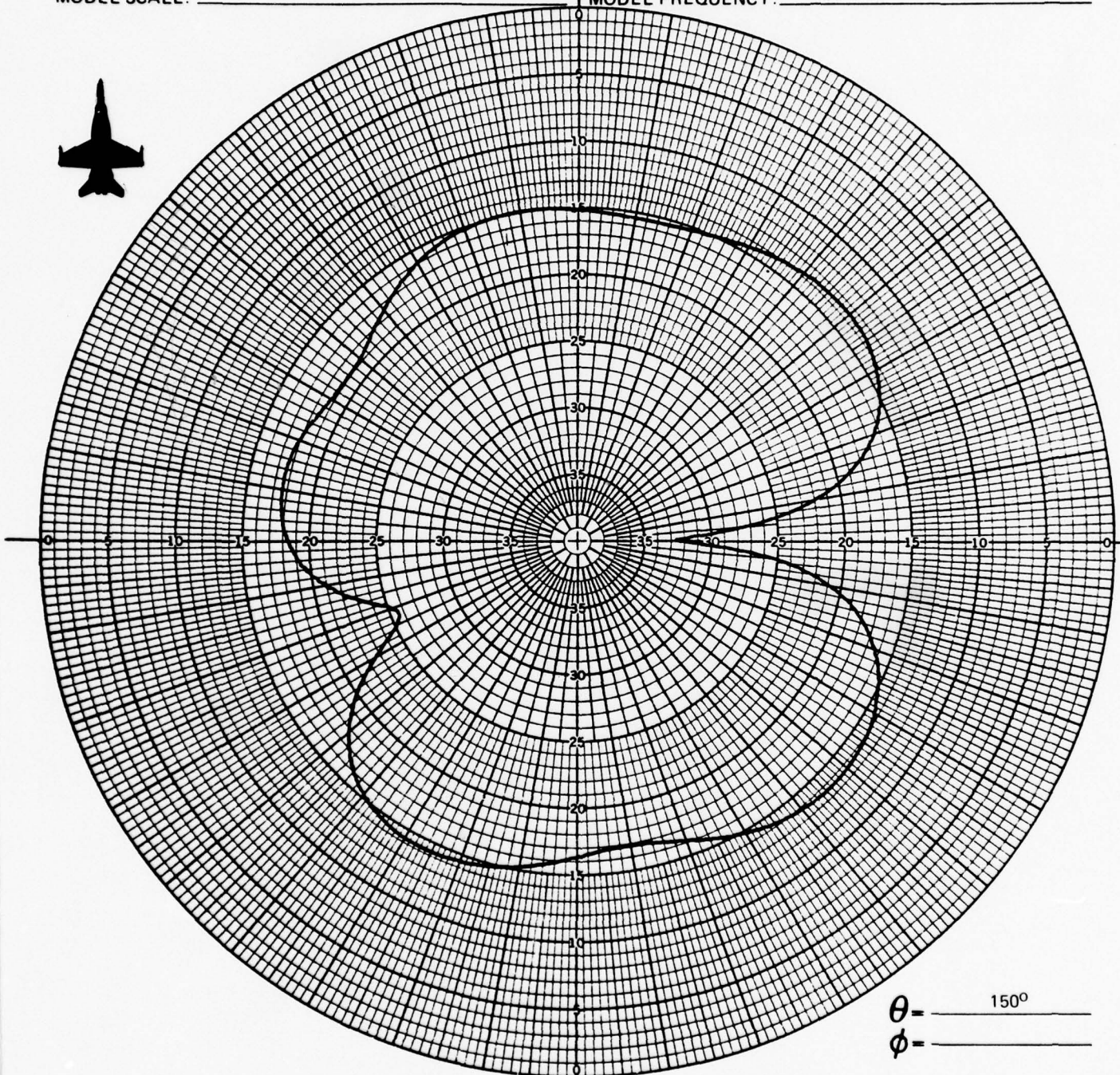
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM _____ DATE: _____ 5-1-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 30 MHz
MODEL FREQUENCY: _____ 120 MHz



θ = _____ 150°
 ϕ = _____

CONFIGURATION: _____ 30
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: _____ 5-1-77

DOCUMENT _____

REVISION _____

ANTENNA: _____ FLYING PROTOTYPE

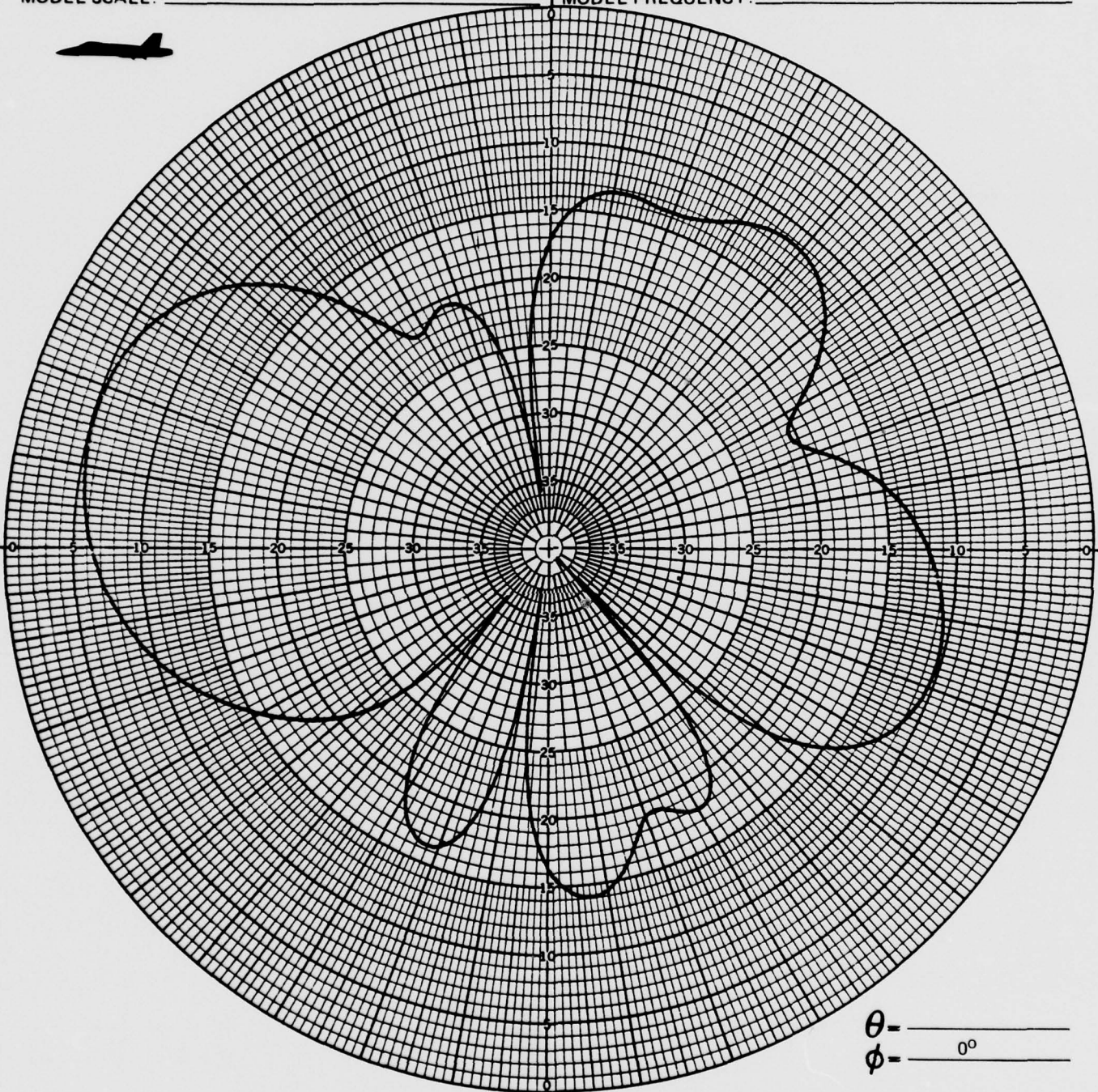
ANTENNA LOCATION: _____ FINCAP

MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)

FULL SCALE FREQUENCY: _____ 42 MHz

MODEL FREQUENCY: _____ 168 MHz



θ - _____
 ϕ - _____ 0°

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM

DATE: _____ 4-29-77

ANTENNA: FLYING PROTOTYPE

ANTENNA LOCATION: FINCAP

MODEL SCALE: 1/4

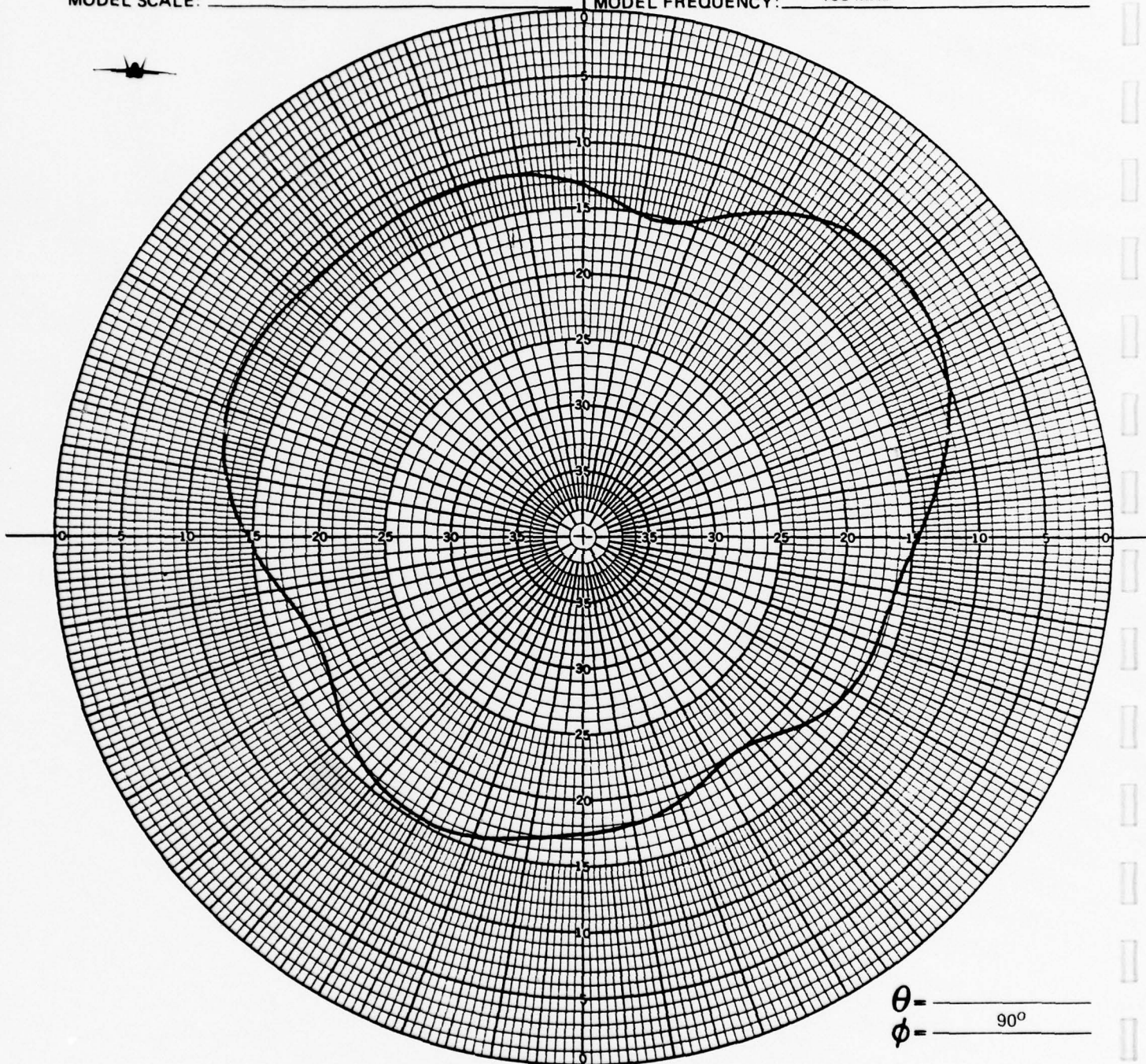
DOCUMENT

REVISION

TEST IDENT.: 703-174 (F-18)

FULL SCALE FREQUENCY: 42 MHz

MODEL FREQUENCY: 168 MHz



θ =
 ϕ = 90°

CONFIGURATION: 30

REMARKS:

INTEGRATOR COUNT:

POLARIZATION: E ϕ ☐ E θ ☒ OTHER:

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: 285 FT

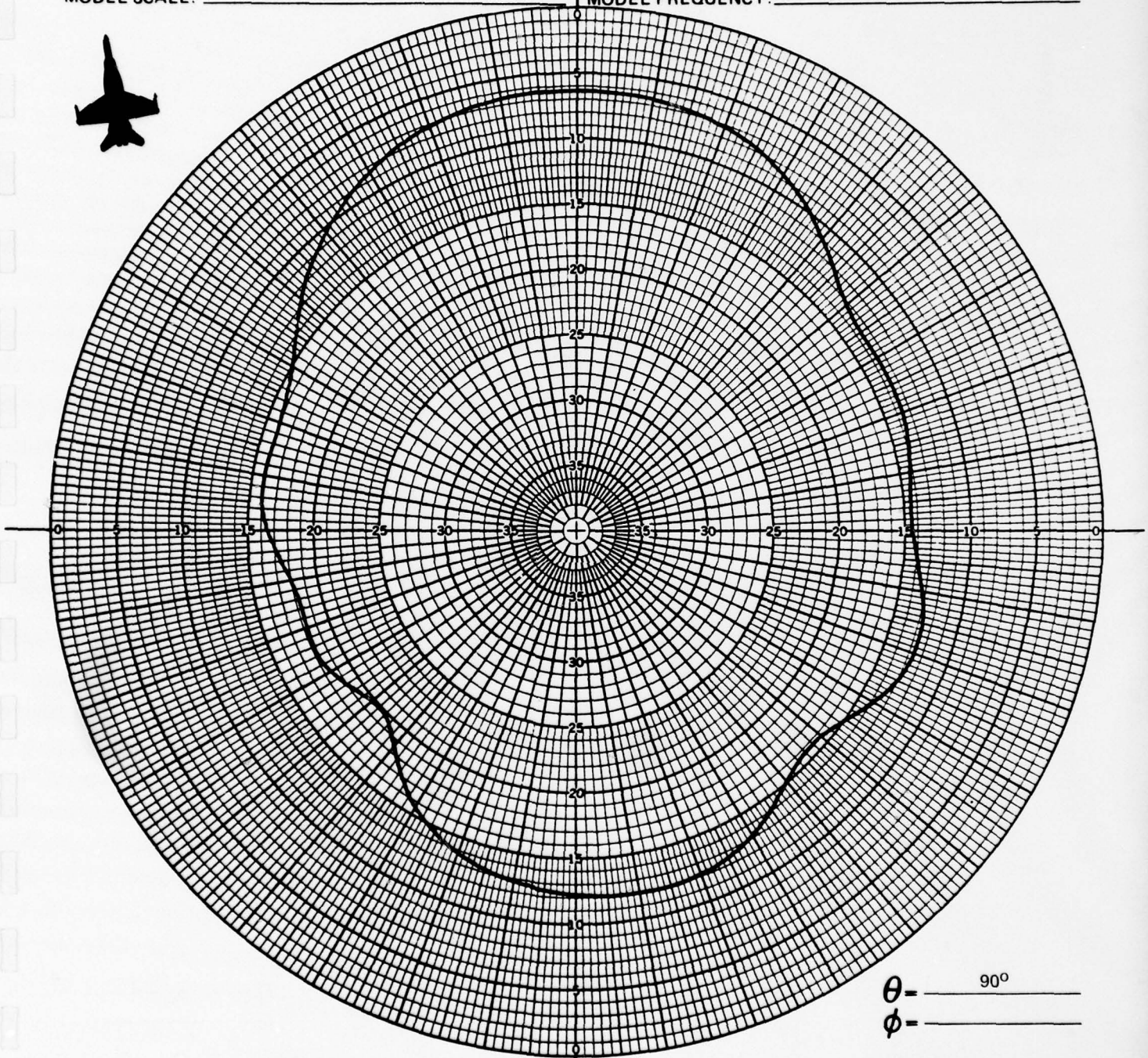
OBSERVER: PN, BM

DATE: 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 42 MHz
MODEL FREQUENCY: _____ 168 MHz



θ = _____ 90°
 ϕ = _____

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

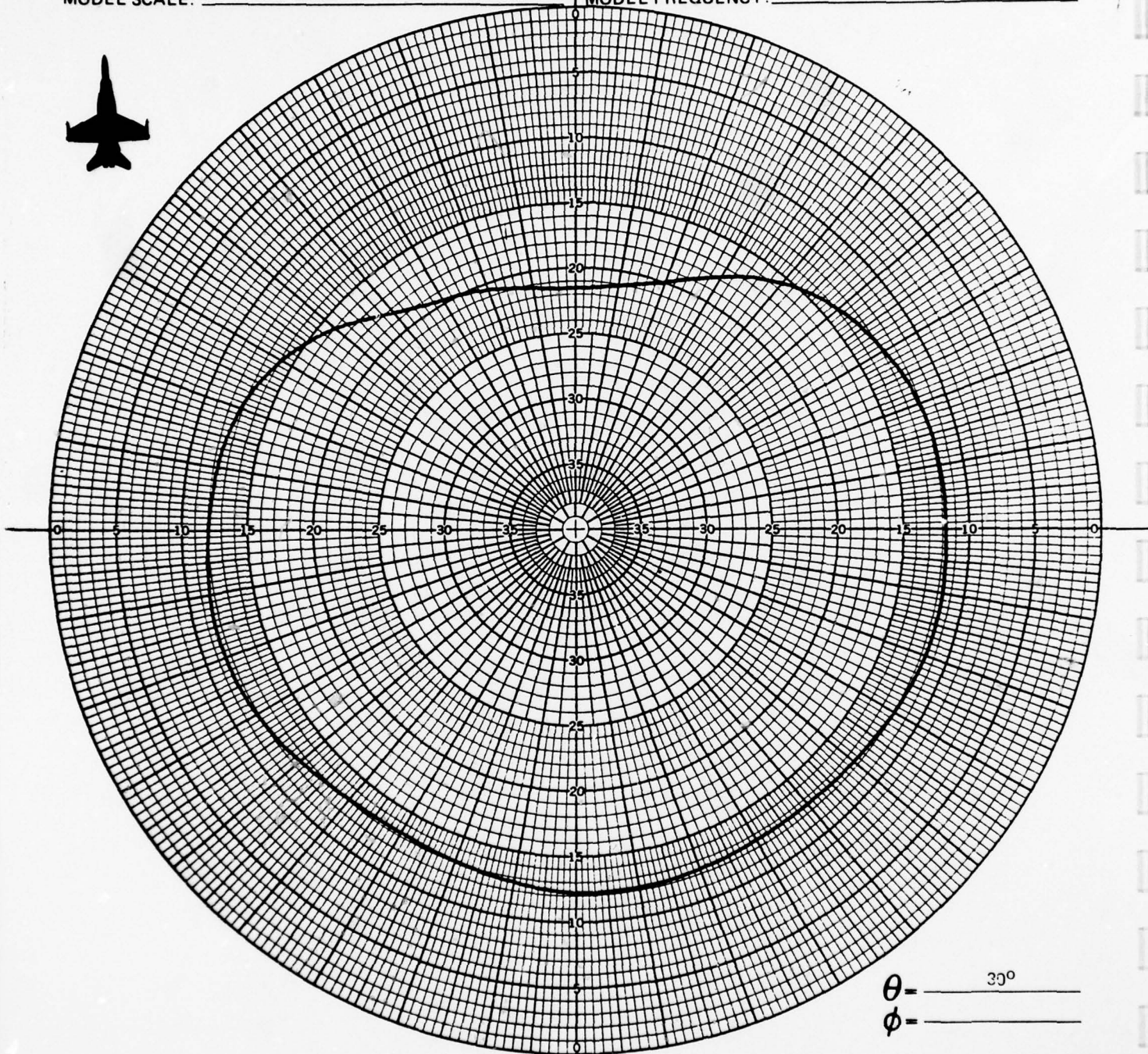
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 42 MHz
MODEL FREQUENCY: _____ 168 MHz



θ = _____ 30°
 ϕ = _____

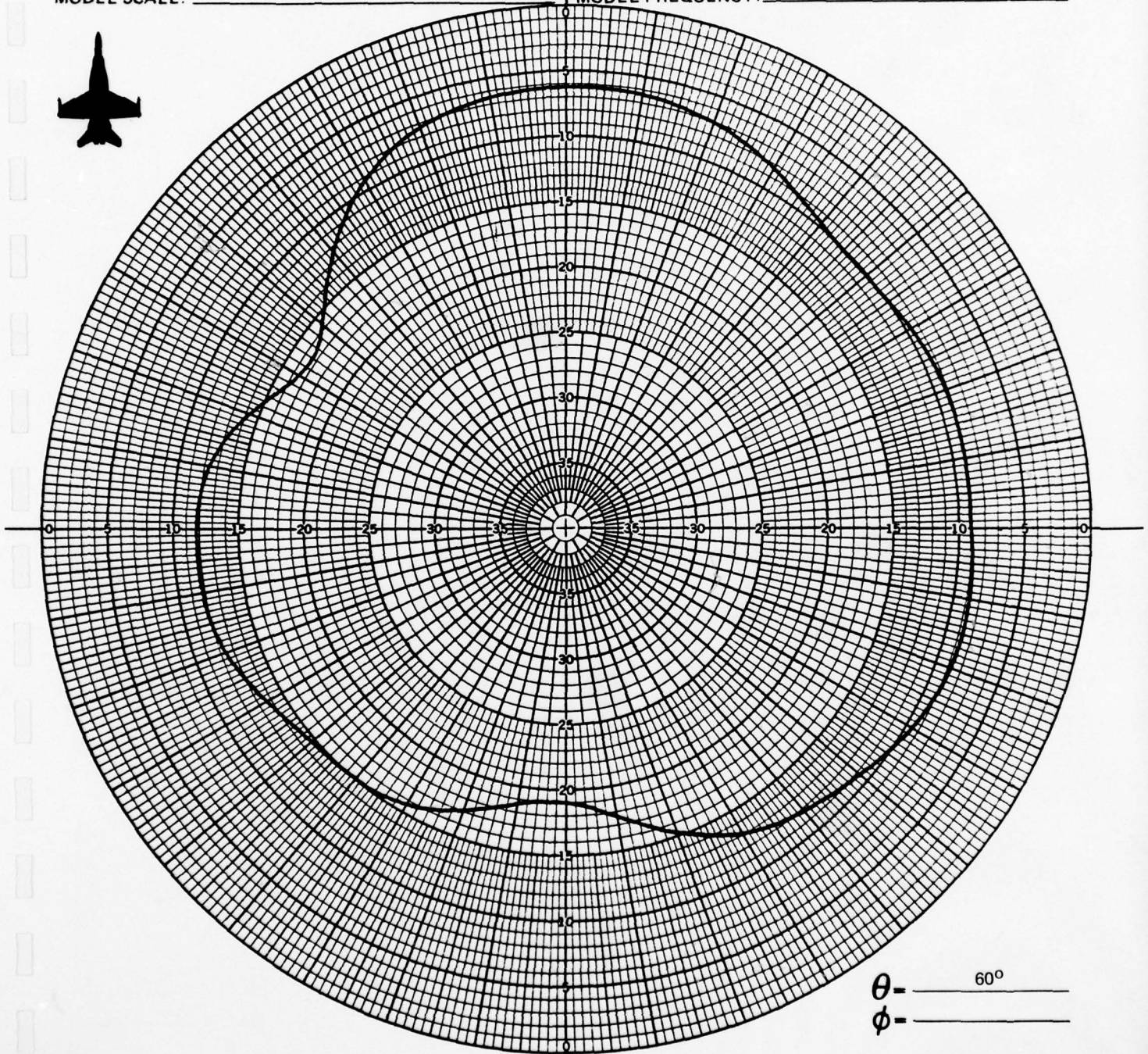
CONFIGURATION _____ 30
REMARKS _____

INTEGRATOR COUNT: _____
POLARIZATION: E ϕ ☐ E θ ☒ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM _____ DATE: _____ 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 42 MHz
MODEL FREQUENCY: _____ 168 MHz



θ - _____ 60°
 ϕ - _____

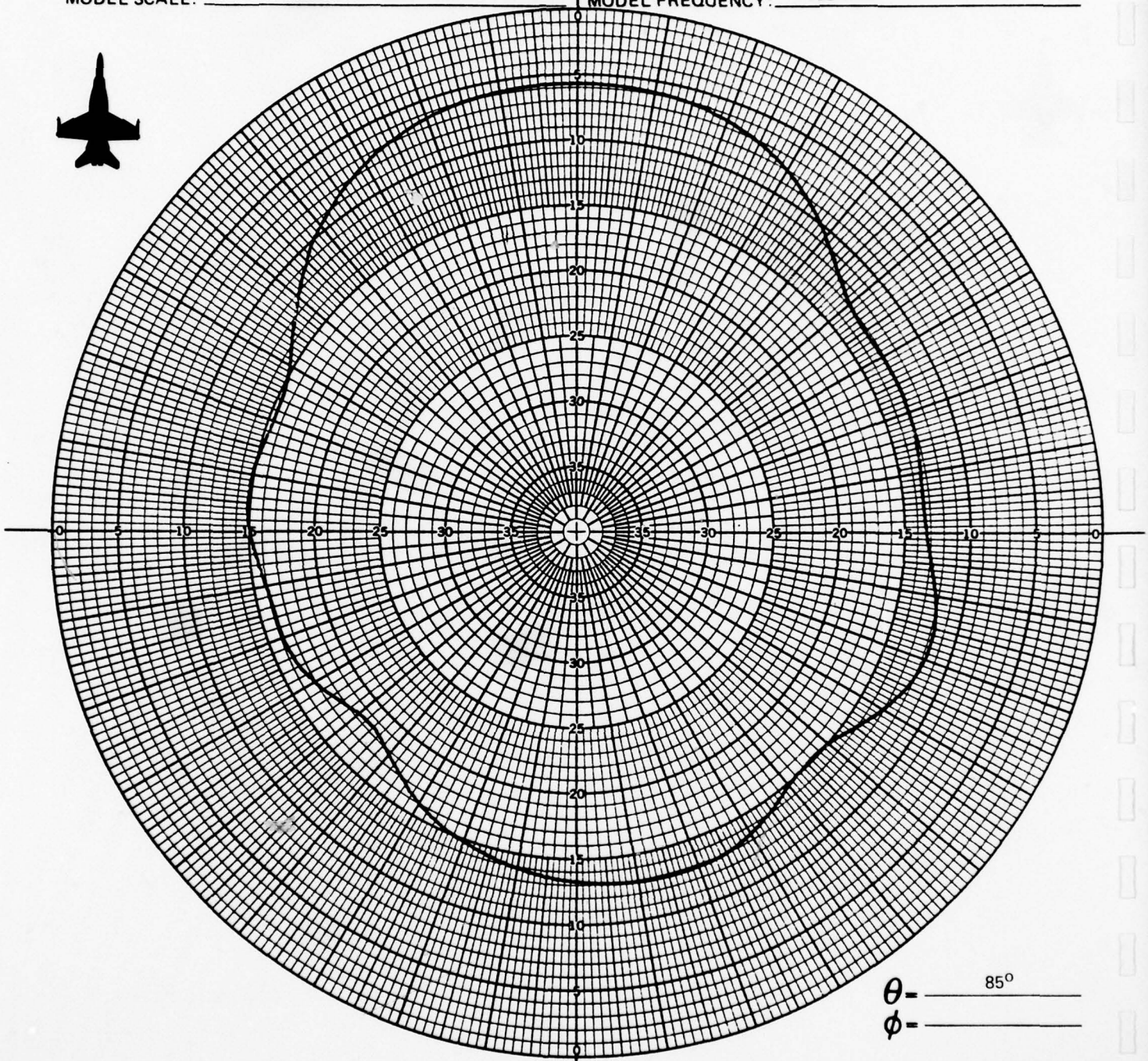
CONFIGURATION: _____ 30
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: _____ 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 42 MHz
MODEL FREQUENCY: _____ 168 MHz



θ - _____ 85°
 ϕ - _____

CONFIGURATION: _____ 30
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: _____ 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE

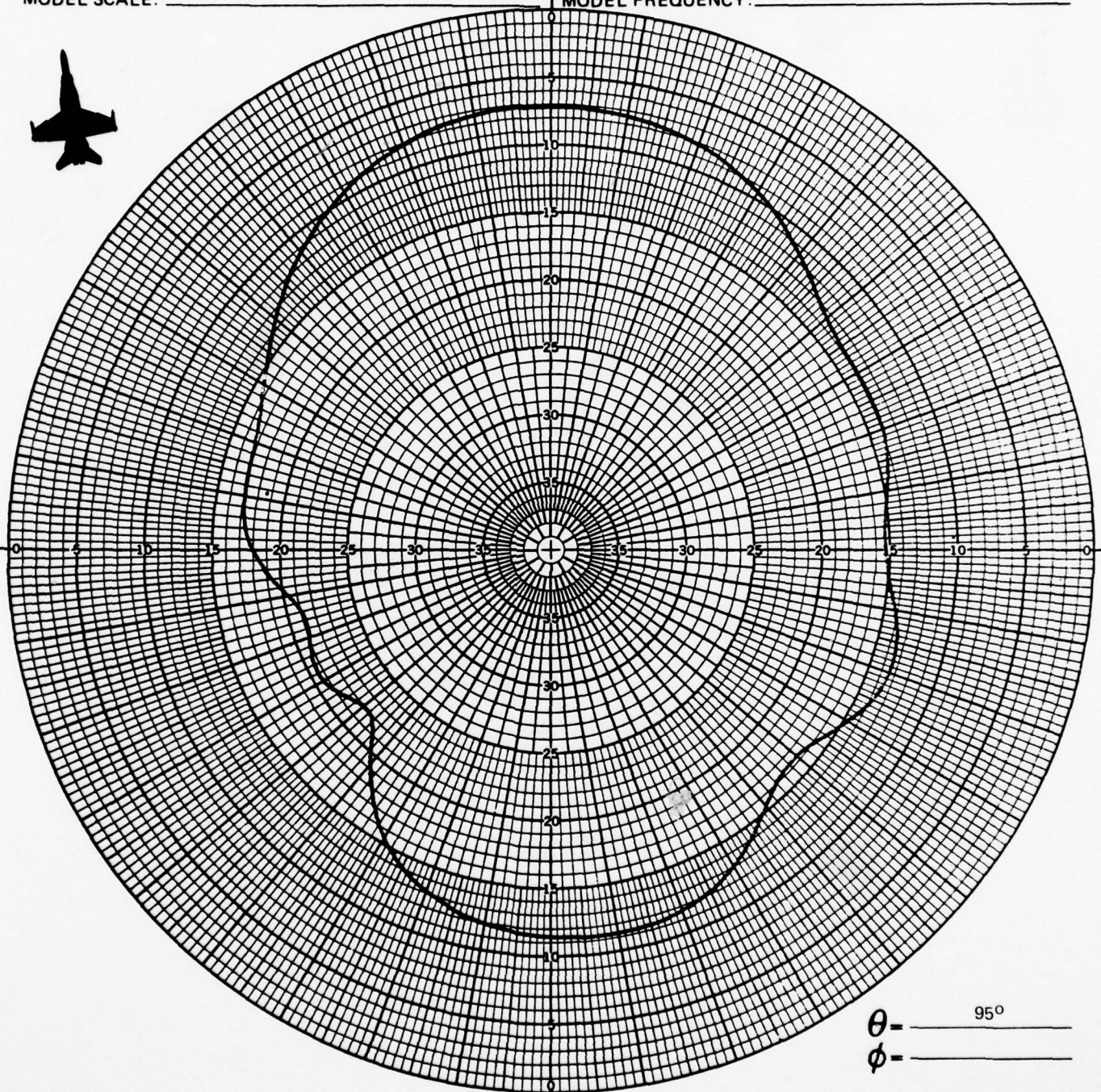
ANTENNA LOCATION: _____ FINCAP

MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)

FULL SCALE FREQUENCY: _____ 42 MHz

MODEL FREQUENCY: _____ 168 MHz



θ - _____ 95°
 ϕ - _____

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE

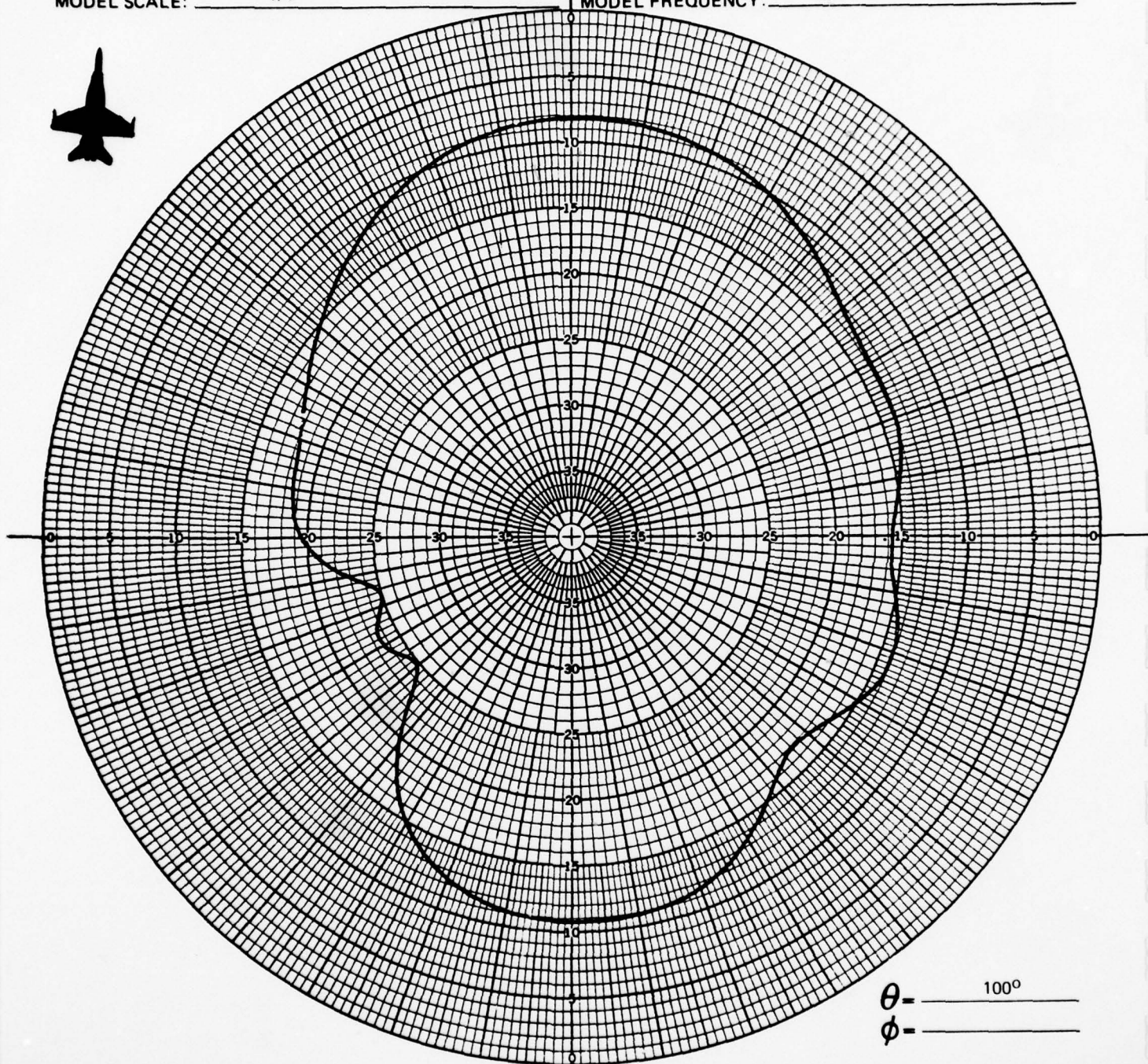
ANTENNA LOCATION: _____ FINCAP

MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)

FULL SCALE FREQUENCY: _____ 42 MHz

MODEL FREQUENCY: _____ 168 MHz



θ - _____ 100°
 ϕ - _____

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM _____ DATE: _____ 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE

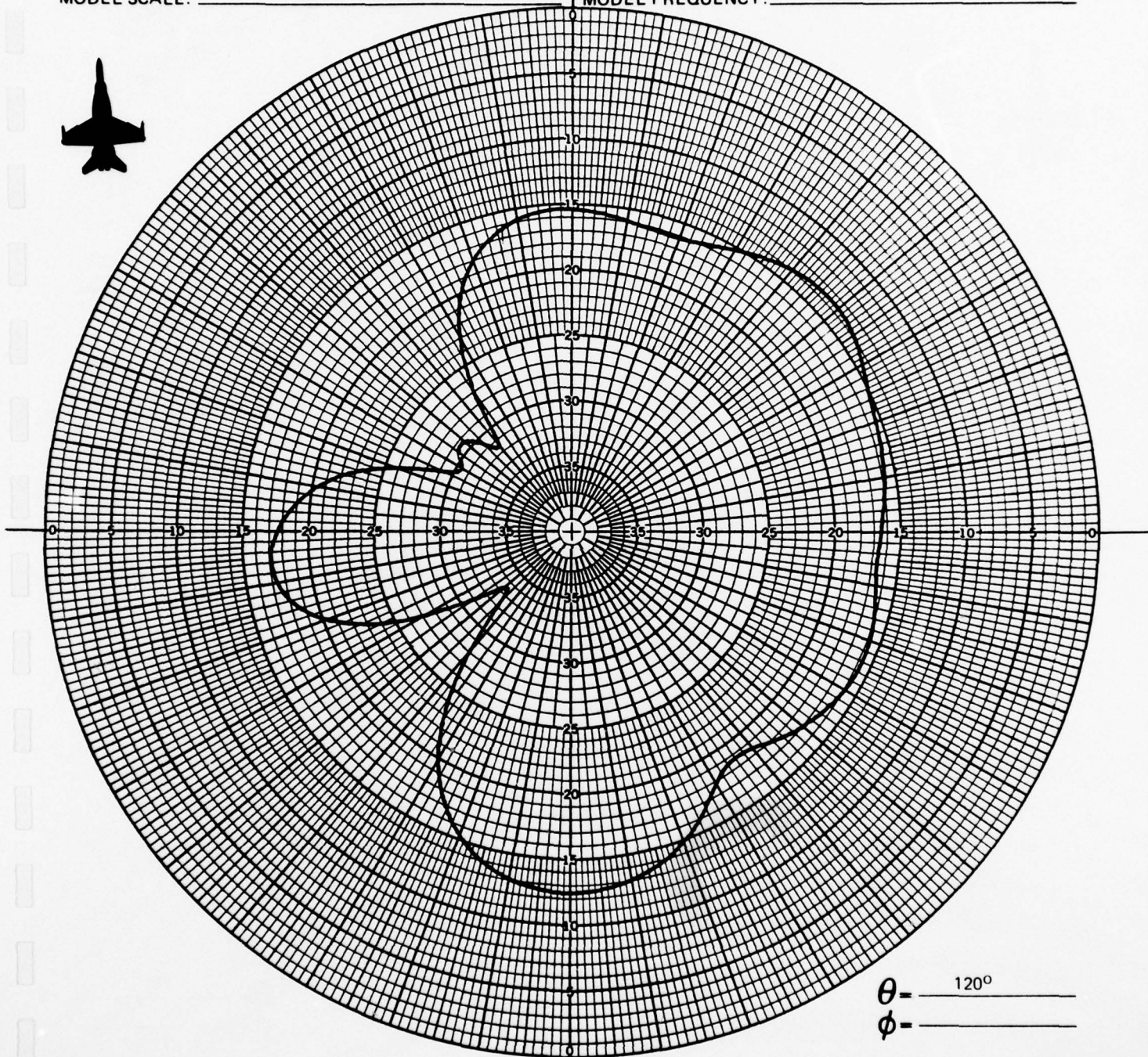
ANTENNA LOCATION: _____ FINCAP

MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)

FULL SCALE FREQUENCY: _____ 42 MHz

MODEL FREQUENCY: _____ 168 MHz



θ - _____ 120°
 ϕ - _____

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: E ϕ ☐ E θ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM

DATE: _____ 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE

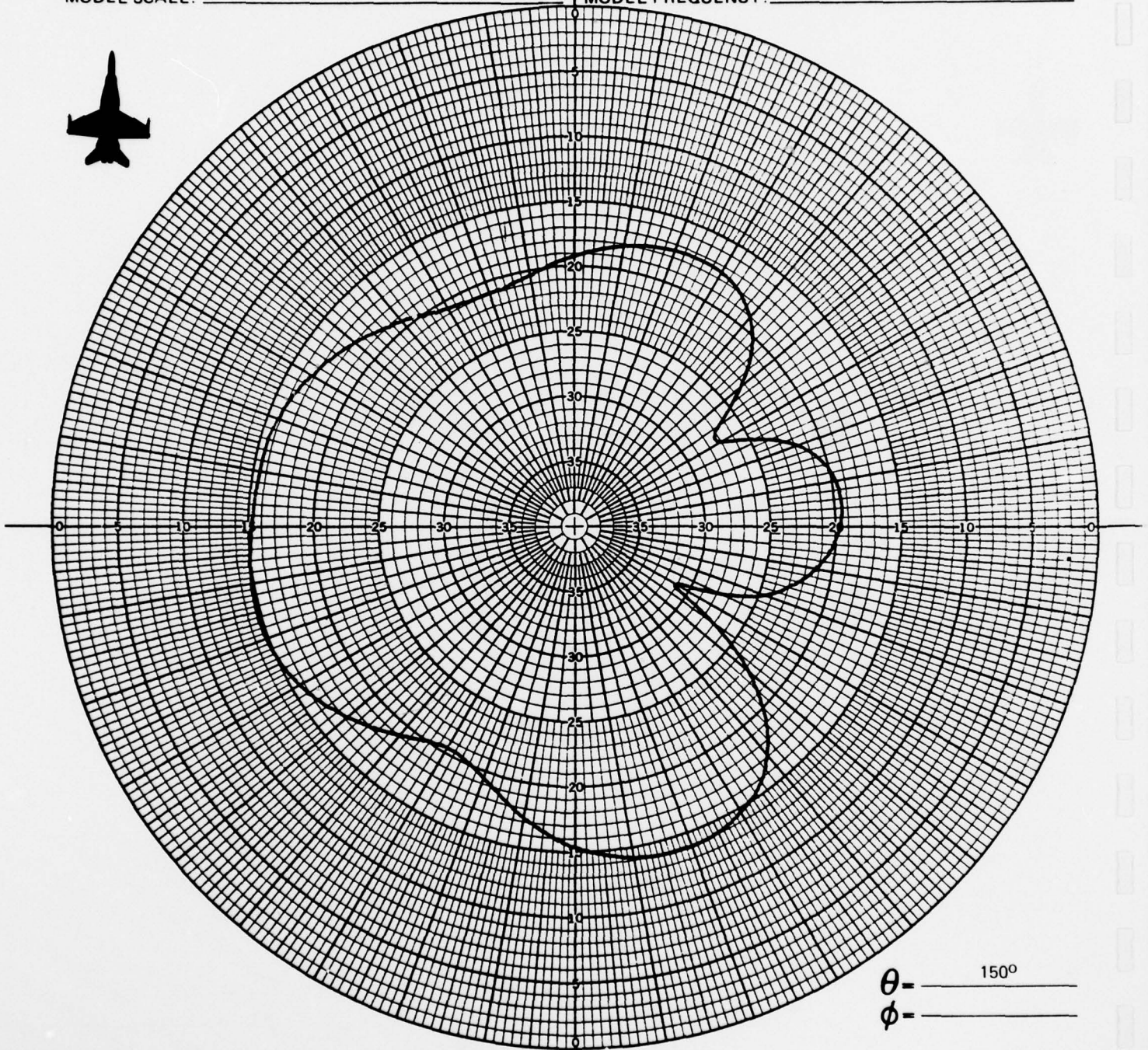
ANTENNA LOCATION: _____ FINCAP

MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)

FULL SCALE FREQUENCY: _____ 42 MHz

MODEL FREQUENCY: _____ 168 MHz



θ = _____ 150°
 ϕ = _____

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE

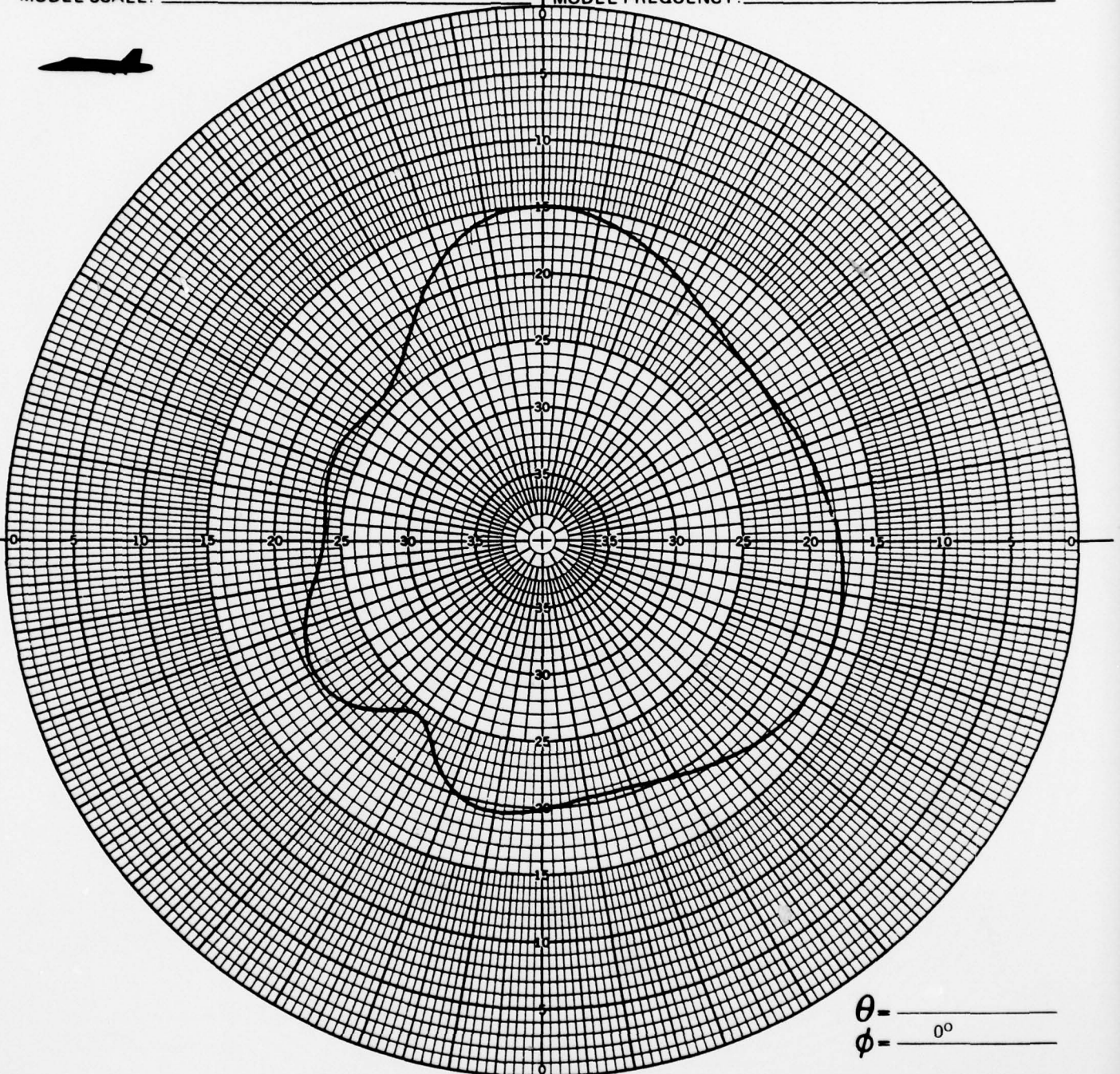
TEST IDENT.: _____ 703-174 (F-18)

ANTENNA LOCATION: _____ FINCAP

FULL SCALE FREQUENCY: _____ 42 MHz

MODEL SCALE: _____ 1/4

MODEL FREQUENCY: _____ 168 MHz



θ = _____
 ϕ = _____ 0°

CONFIGURATION: _____ 30

INTEGRATOR COUNT: _____

REMARKS: _____

POLARIZATION: ☐ E ☒ ϕ ☐ E θ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM _____ DATE: _____ 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE

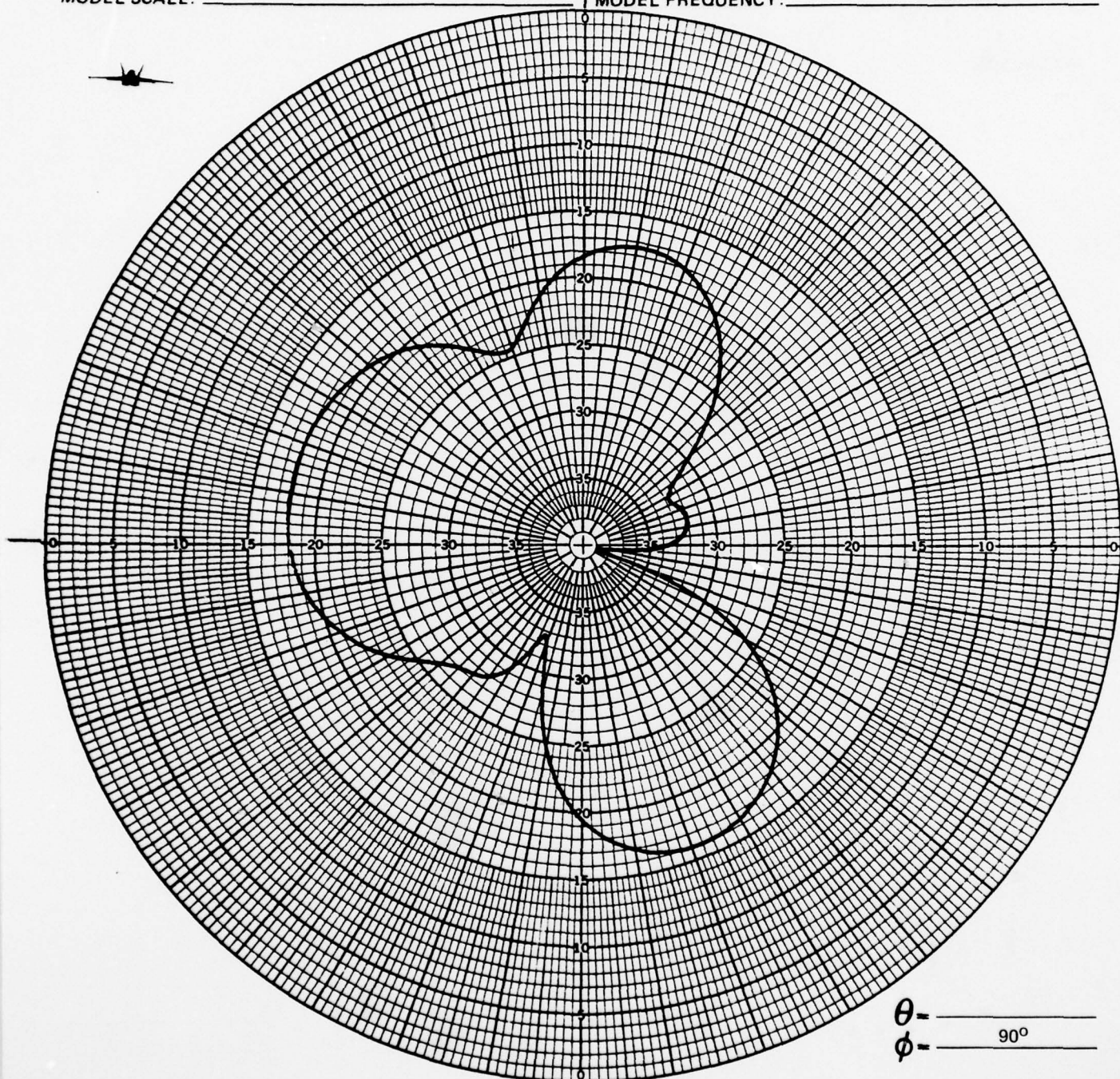
TEST IDENT.: 703-174 (F-18)

ANTENNA LOCATION: FINCAP

FULL SCALE FREQUENCY: 42 MHz

MODEL SCALE: 1/4

MODEL FREQUENCY: 168 MHz



θ = _____
 ϕ = 90°

CONFIGURATION: 30

INTEGRATOR COUNT: _____

REMARKS: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 4-29-77

ANTENNA: FLYING PROTOTYPE

ANTENNA LOCATION: FINCAP

MODEL SCALE: 1/4

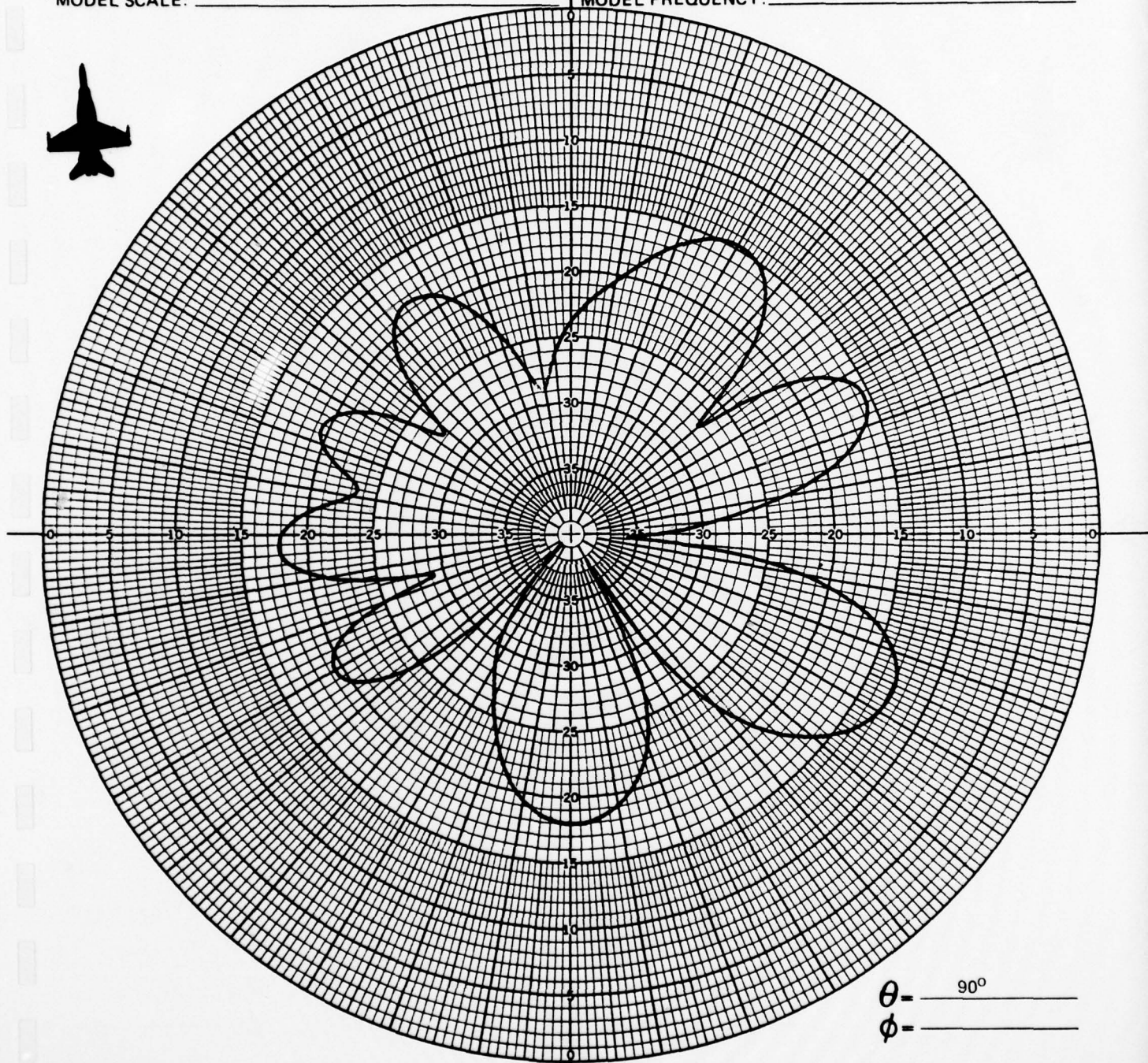
DOCUMENT

REVISION

TEST IDENT.: 703-174 (F-18)

FULL SCALE FREQUENCY: 42 MHz

MODEL FREQUENCY: 168 MHz



θ - 90°

ϕ -

CONFIGURATION: 30

REMARKS:

INTEGRATOR COUNT:

POLARIZATION: E ☒ H ☐ OTHER:

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: 285 FT

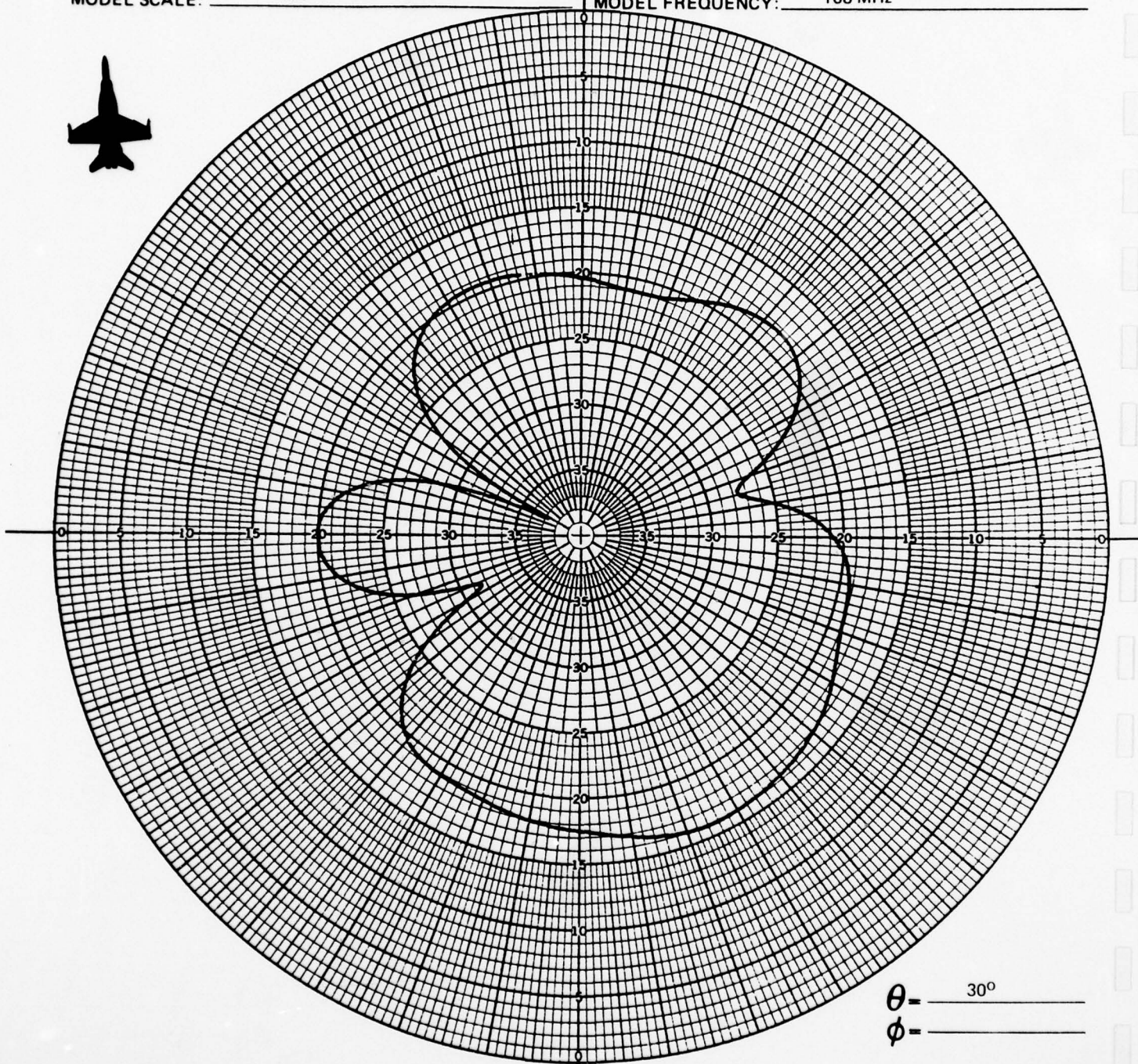
OBSERVER: PN, BM

DATE: 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 42 MHz
MODEL FREQUENCY: _____ 168 MHz



θ - _____ 30°
 ϕ - _____

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

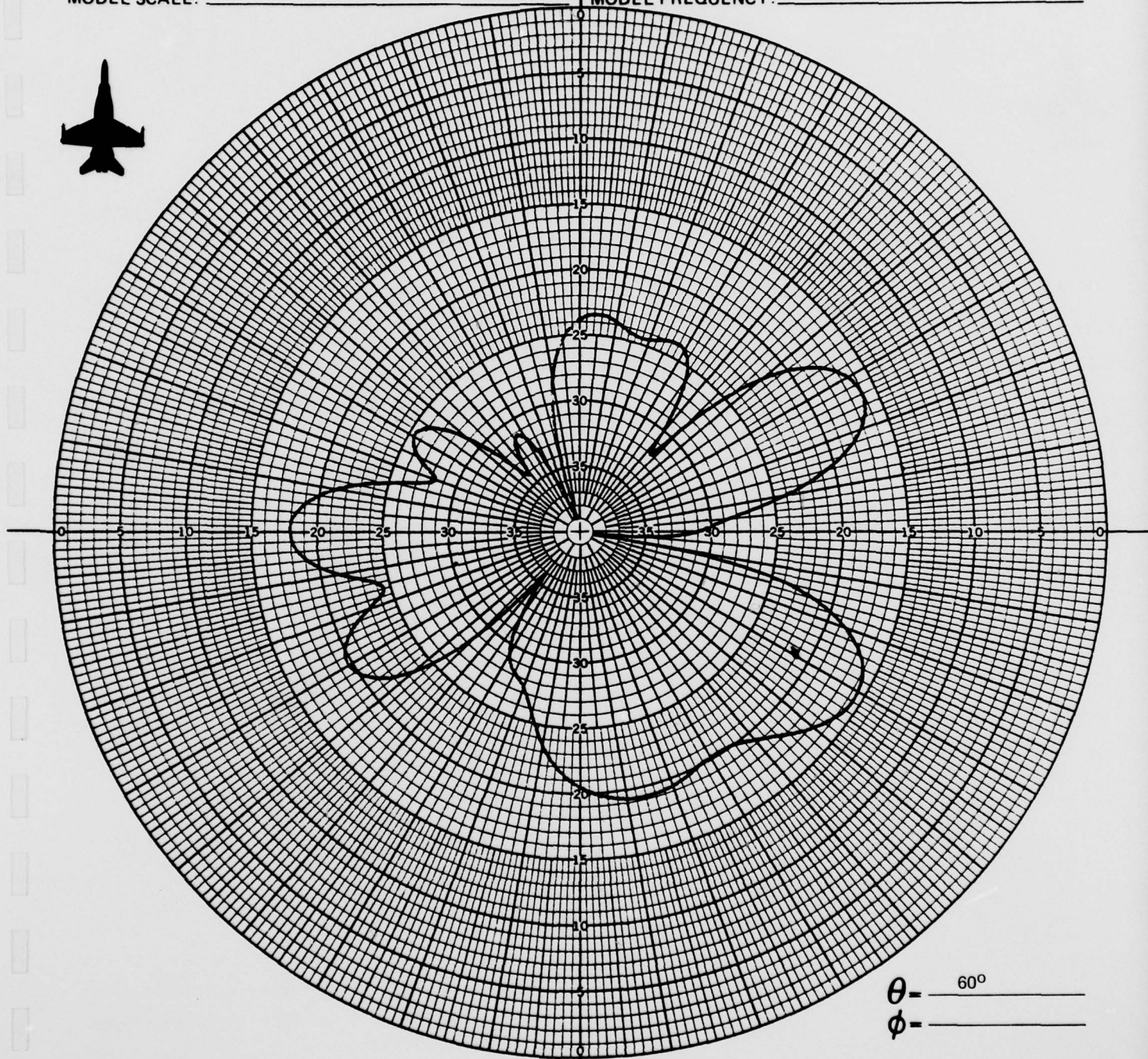
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 42 MHz
MODEL FREQUENCY: _____ 168 MHz



θ = 60°
 ϕ = _____

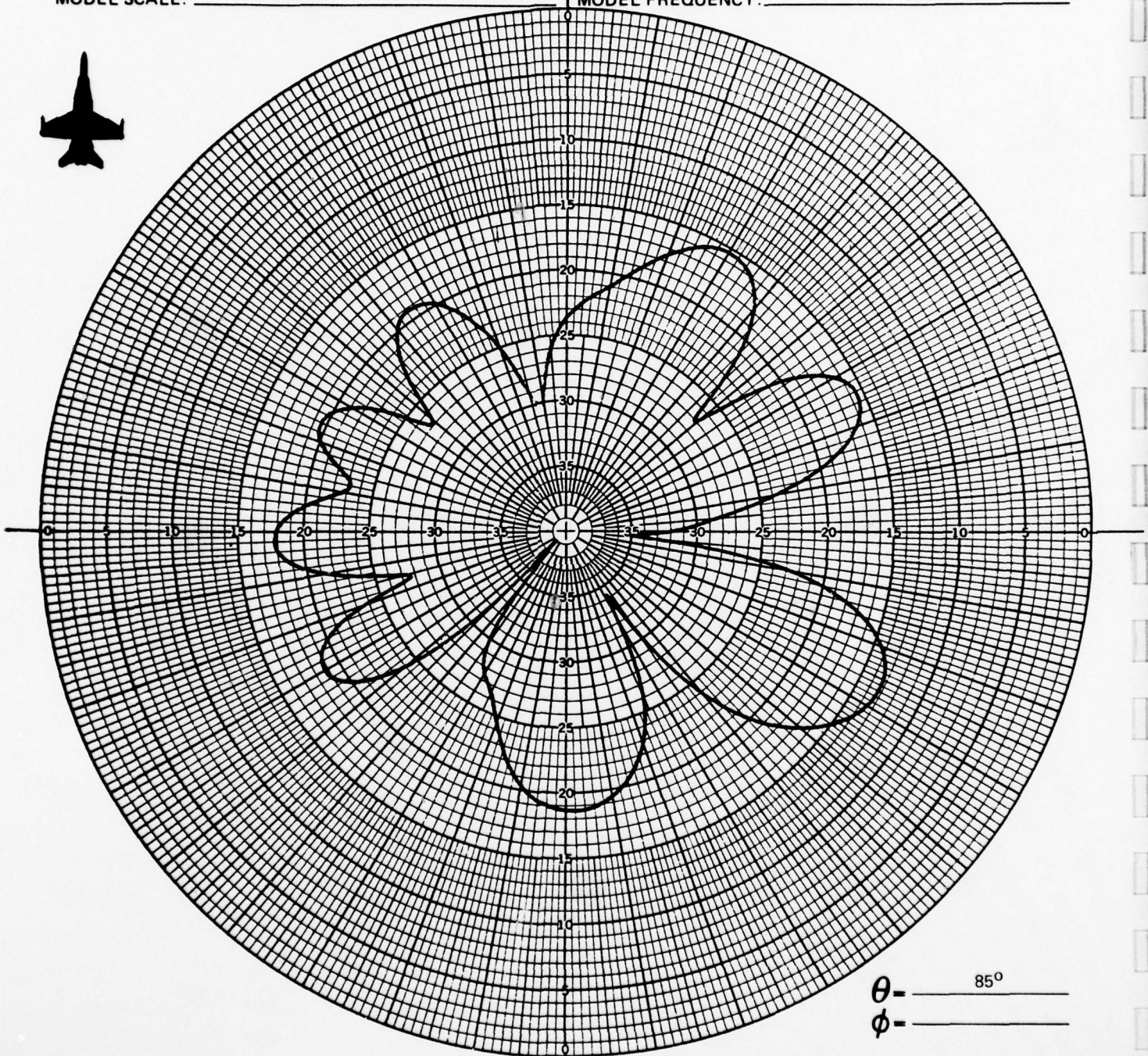
CONFIGURATION: _____ 30
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: _____ 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 42 MHz
MODEL FREQUENCY: _____ 168 MHz



θ - _____ 85°
 ϕ - _____

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE

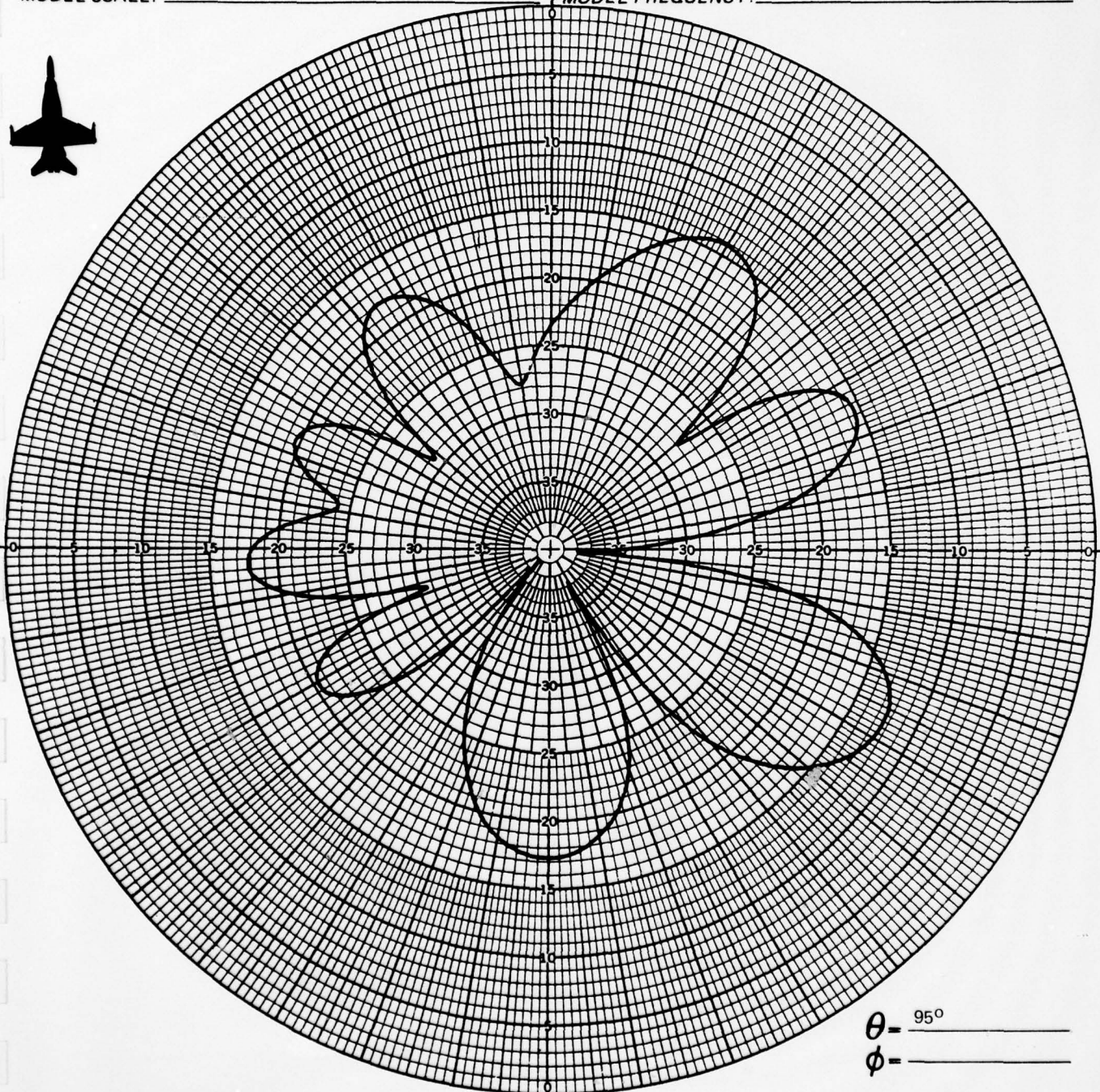
ANTENNA LOCATION: _____ FINCAP

MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)

FULL SCALE FREQUENCY: _____ 42 MHz

MODEL FREQUENCY: _____ 168 MHz



θ = 95° _____
 ϕ = _____

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 4-29-77

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MCDONNELL AIRCRAFT CO ST LOUIS MO
MULTIBAND ANTENNA SYSTEM FOR TACTICAL AIRCRAFT.(U)
SEP 77 F W VORTMEIER

F/G 17/2.1

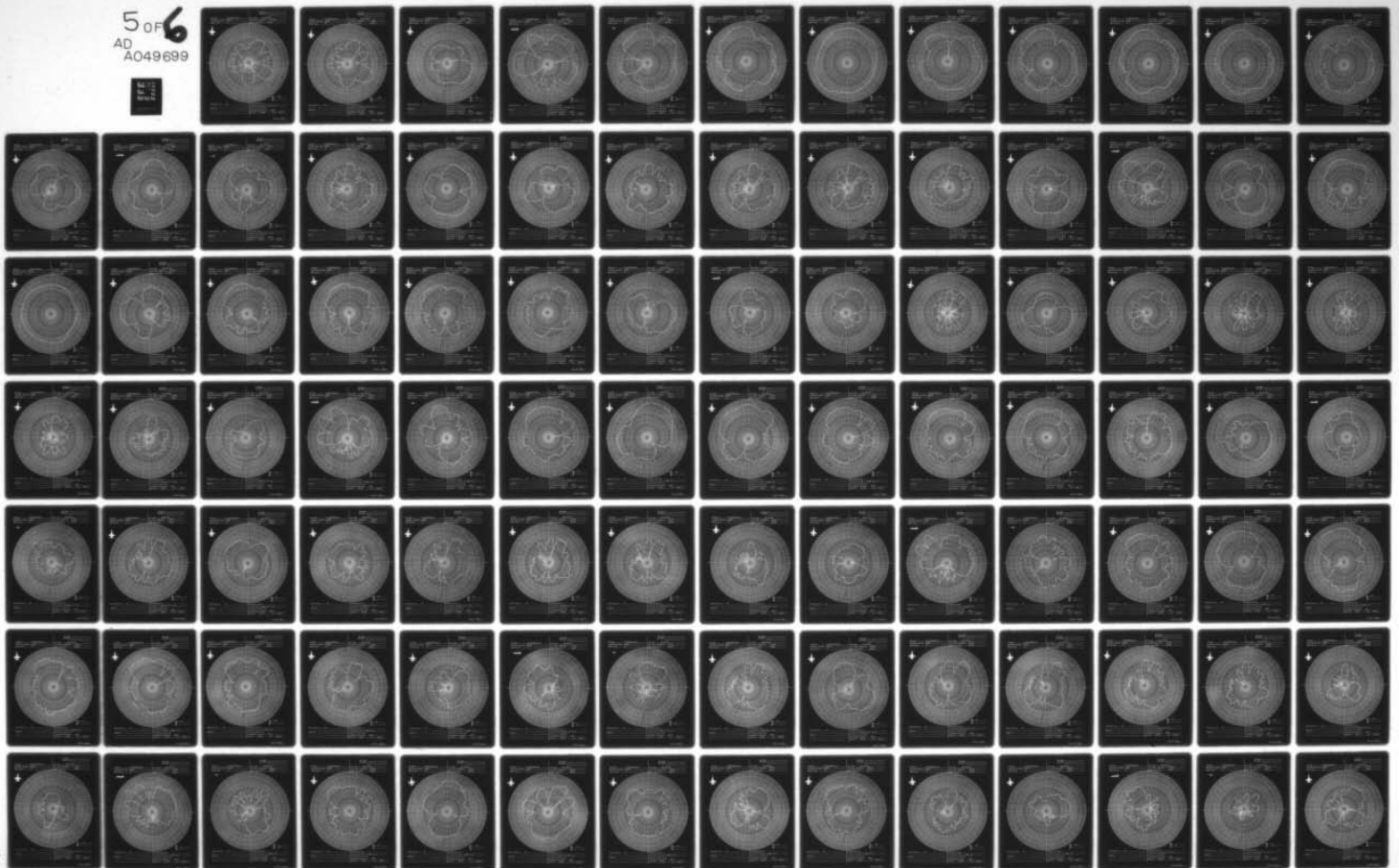
UNCLASSIFIED

NADC-76240-20

N62269-77-C-0138

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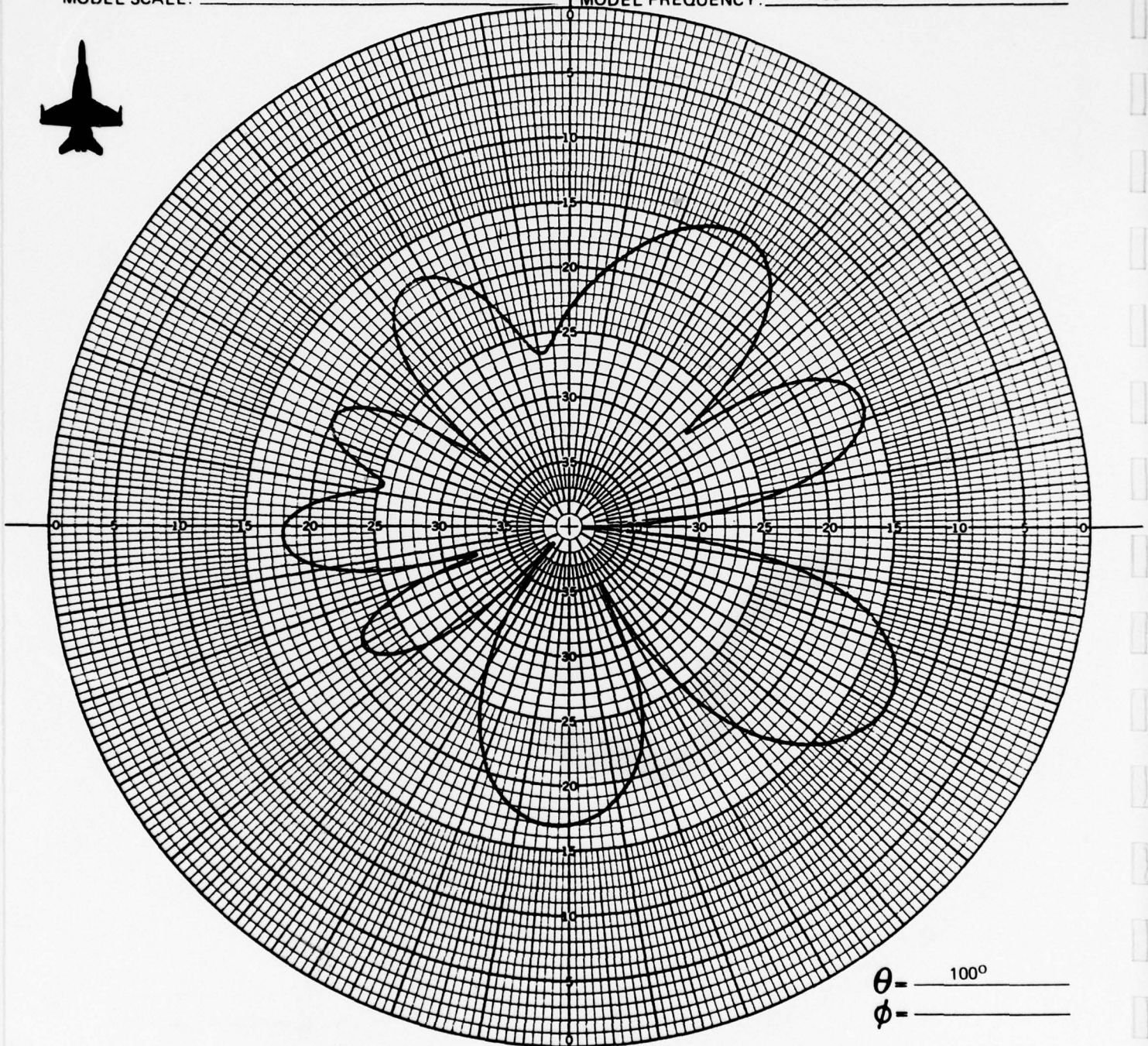


1

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 42 MHz
MODEL FREQUENCY: _____ 168 MHz



θ - _____ 100°
 ϕ - _____

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: E ϕ ☒ E θ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

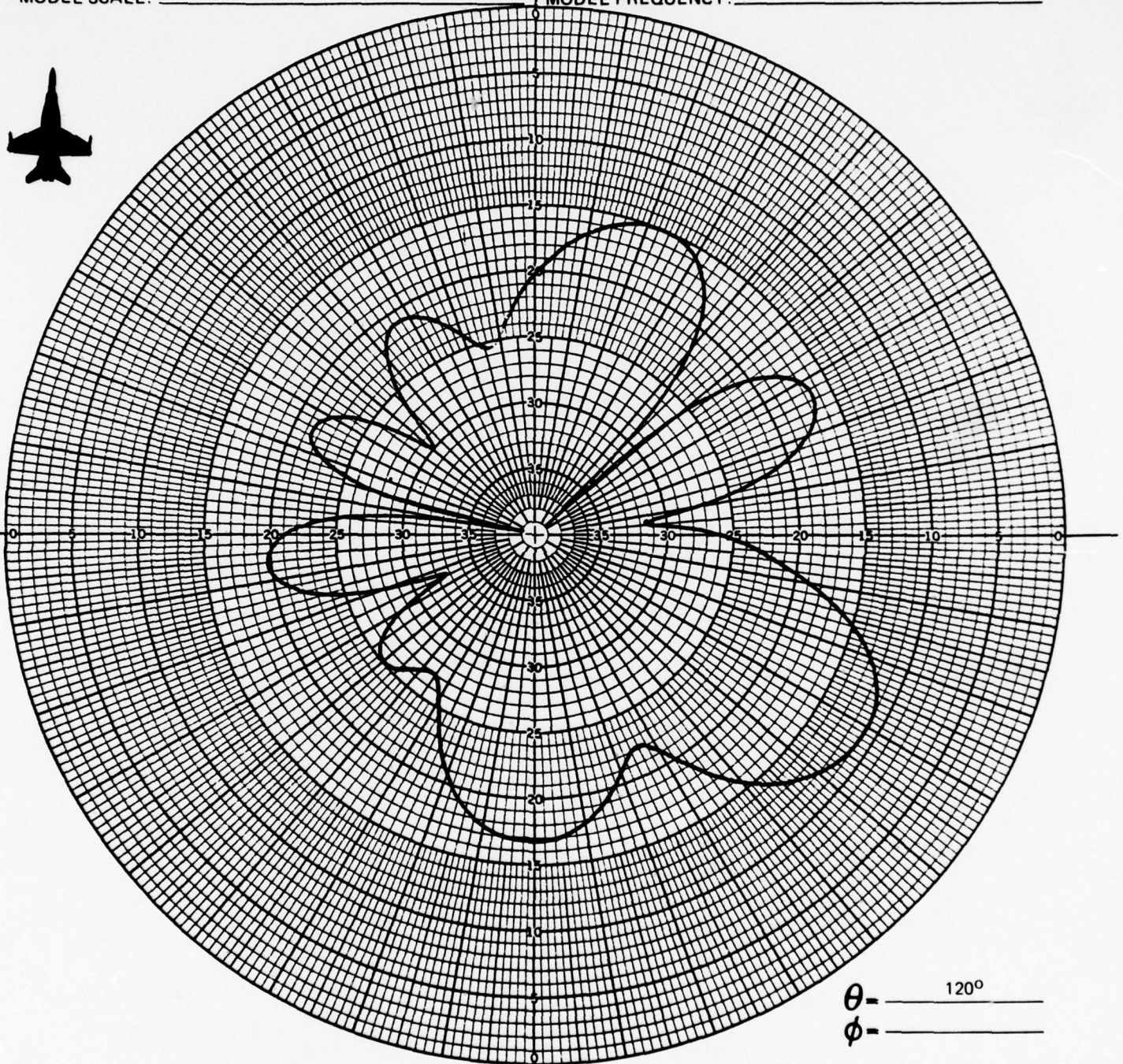
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/4

TEST IDENT.: 703-174 (F-18)
FULL SCALE FREQUENCY: 42 MHz
MODEL FREQUENCY: 168 MHz



θ - 120°
 ϕ - _____

CONFIGURATION: 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE

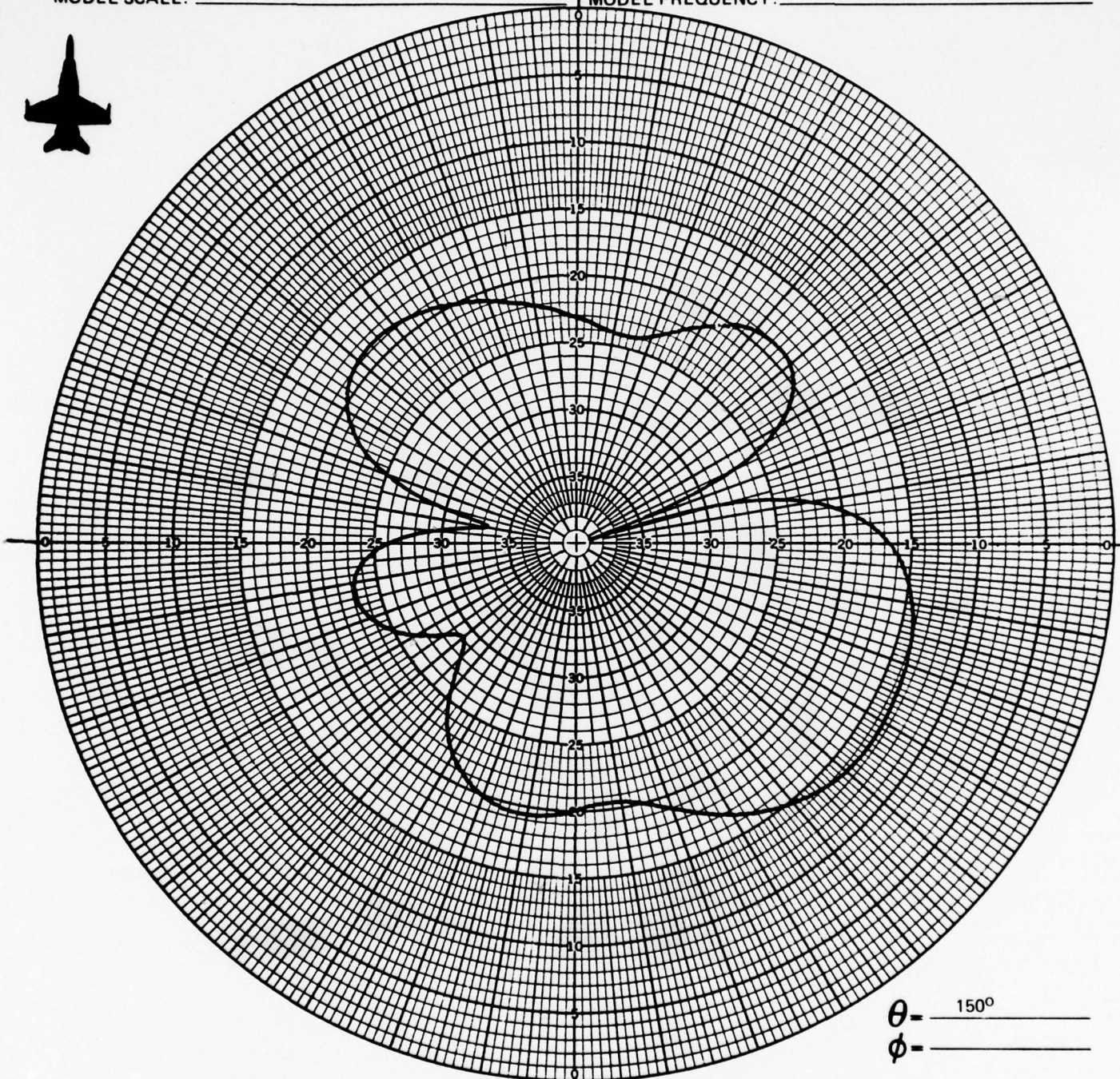
ANTENNA LOCATION: _____ FINCAP

MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)

FULL SCALE FREQUENCY: _____ 42 MHz

MODEL FREQUENCY: _____ 168 MHz



θ = _____ 150°
 ϕ = _____

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM

DATE: _____ 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE

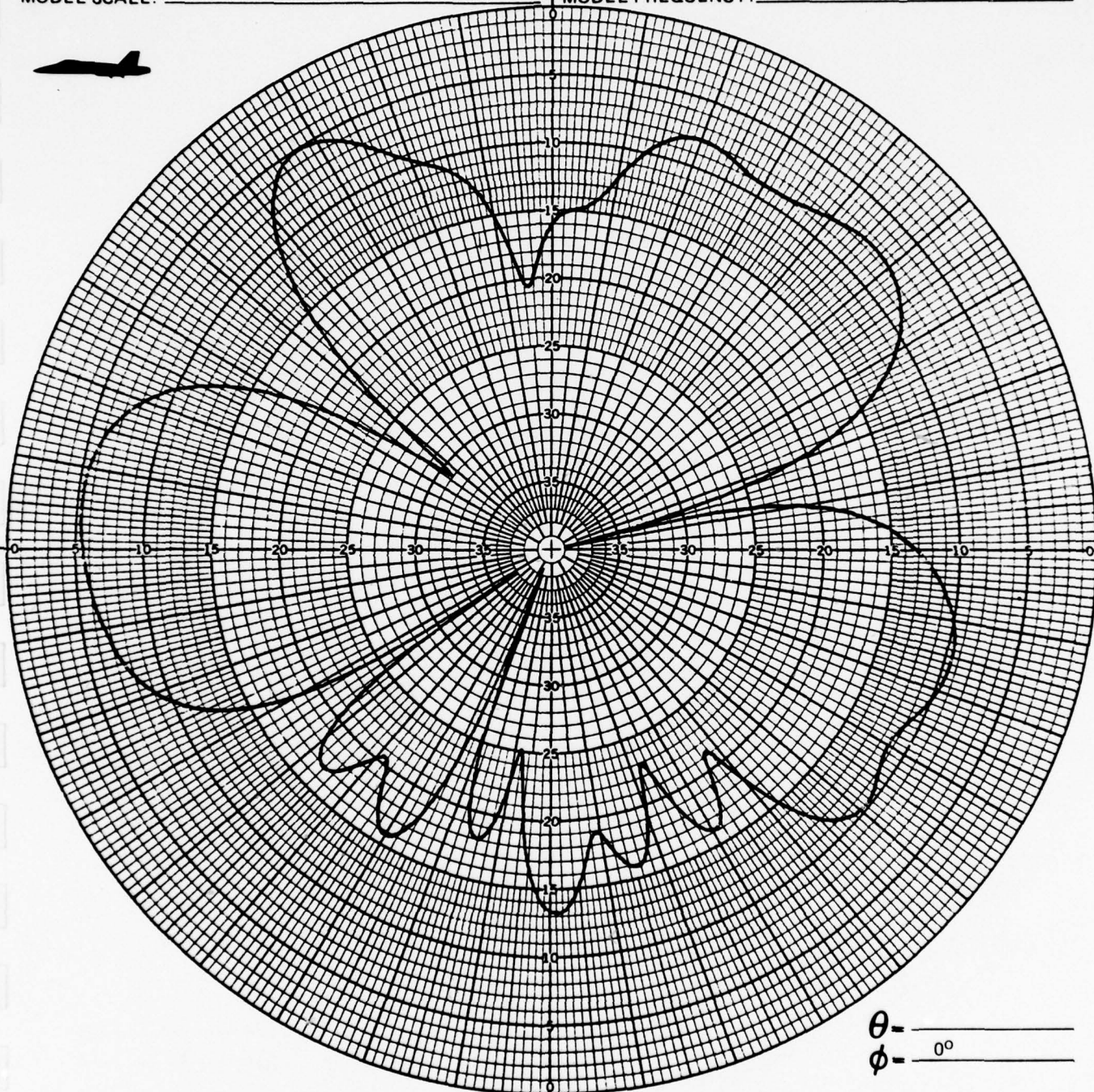
ANTENNA LOCATION: FINCAP

MODEL SCALE: 1/4

TEST IDENT.: 703-174 (F-18)

FULL SCALE FREQUENCY: 76 MHz

MODEL FREQUENCY: 304 MHz



θ - _____
 ϕ - 0°

CONFIGURATION: 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: 285 FT

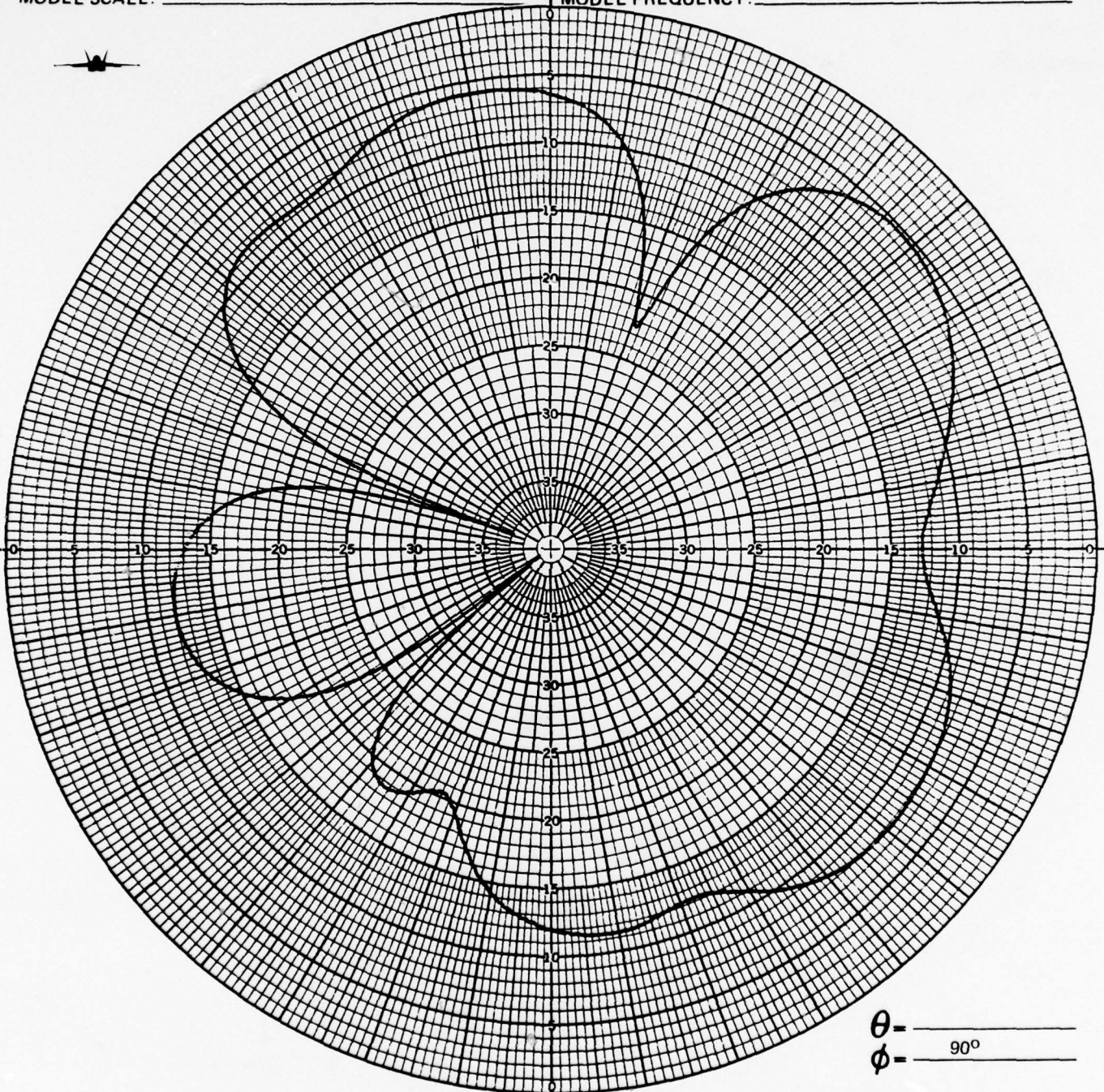
OBSERVER: PN, BM

DATE: 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/4

TEST IDENT.: 703-174 (F-18)
FULL SCALE FREQUENCY: 76 MHz
MODEL FREQUENCY: 304 MHz



θ - _____
 ϕ - 90°

CONFIGURATION: 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

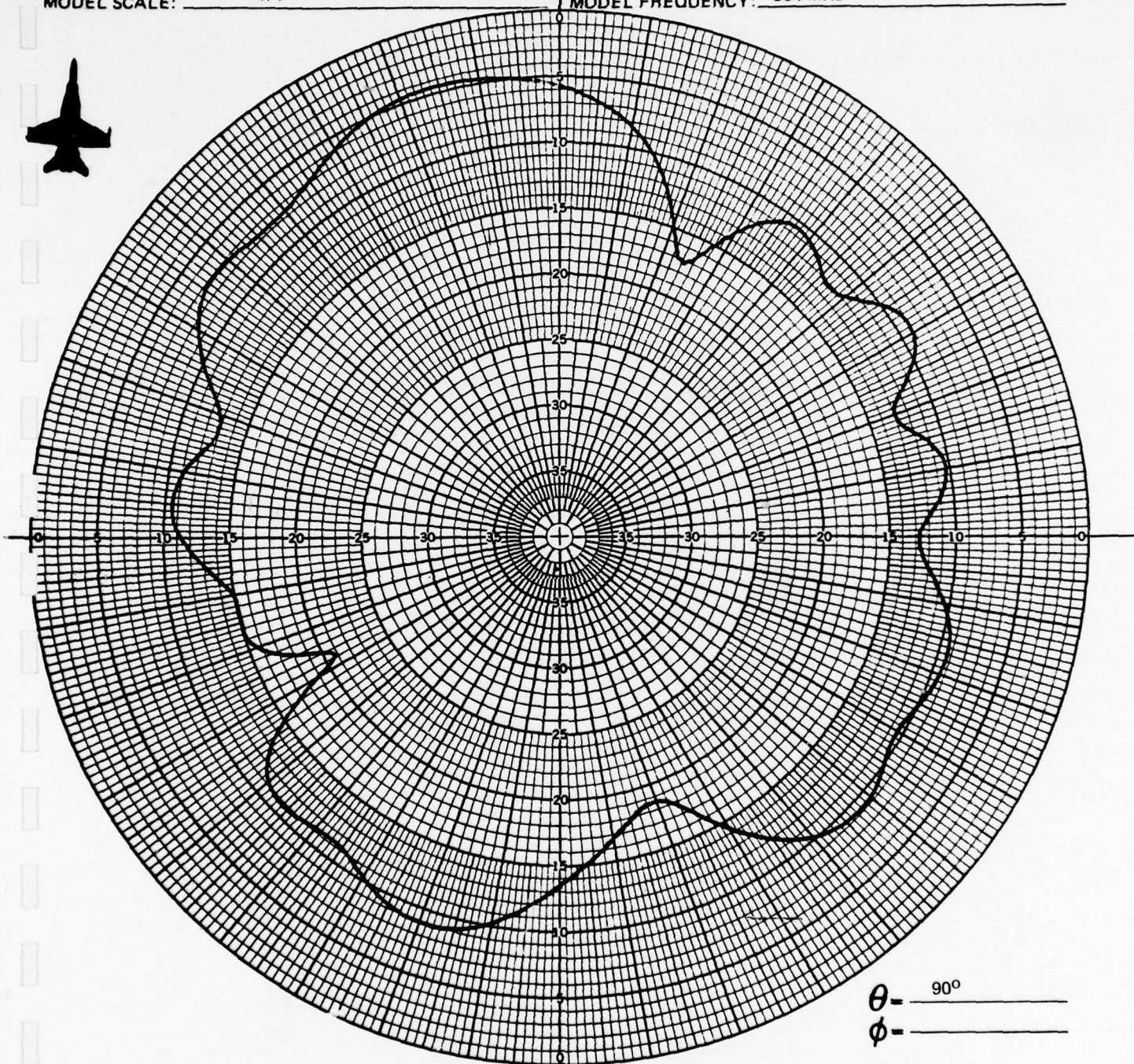
TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/4

TEST IDENT.: 703-174 (F-18)
FULL SCALE FREQUENCY: 76 MHz
MODEL FREQUENCY: 304 MHz



θ - 90°
 ϕ - _____

CONFIGURATION: 30

INTEGRATOR COUNT: _____

REMARKS: _____

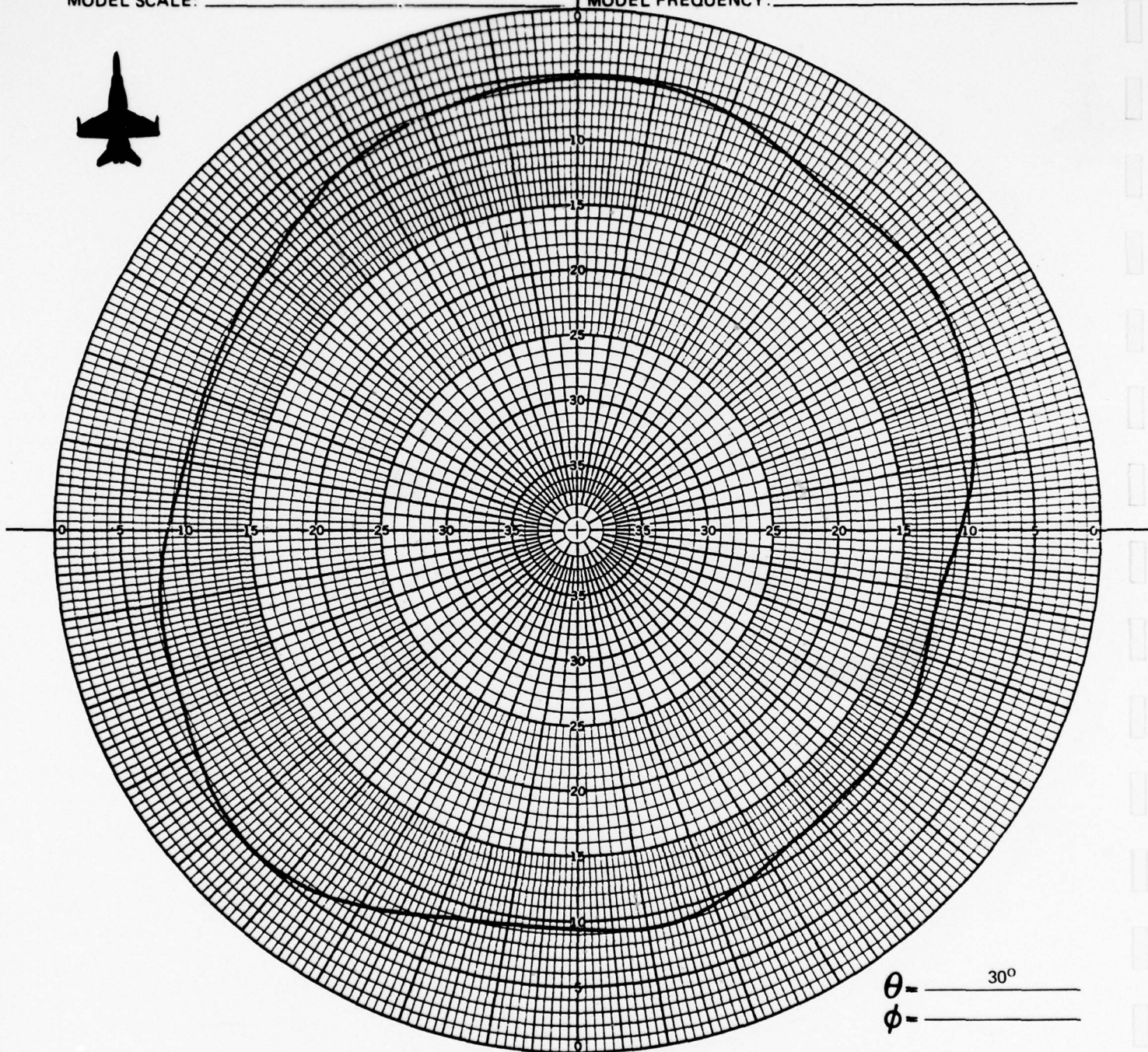
POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 4-29-77

TEST IDENT.: 703-174 (F-18)
FULL SCALE FREQUENCY: 76 MHz
MODEL FREQUENCY: 304 MHz


$$\theta = 30^\circ$$

$$\phi =$$

CONFIGURATION: 30

REMARKS:

INTEGRATOR COUNT: _____
POLARIZATION: E ☐ ϕ ☐ E θ ☒ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM _____ DATE: _____ 4-29-77

DOCUMENT _____

REVISION _____

ANTENNA: _____ FLYING PROTOTYPE

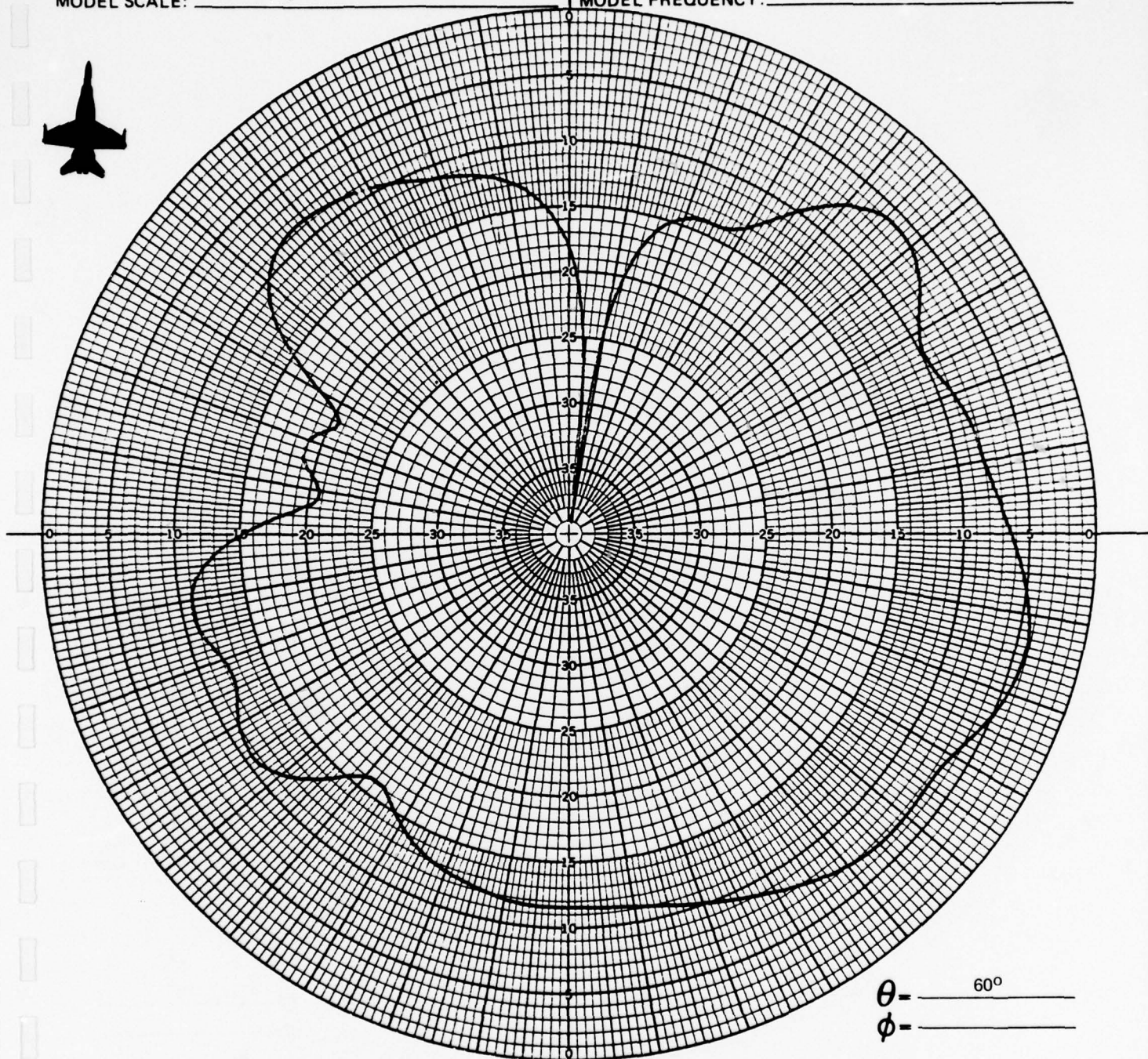
ANTENNA LOCATION: _____ FINCAP

MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)

FULL SCALE FREQUENCY: _____ 76 MHz

MODEL FREQUENCY: _____ 304 MHz



θ = _____ 60°

ϕ = _____

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

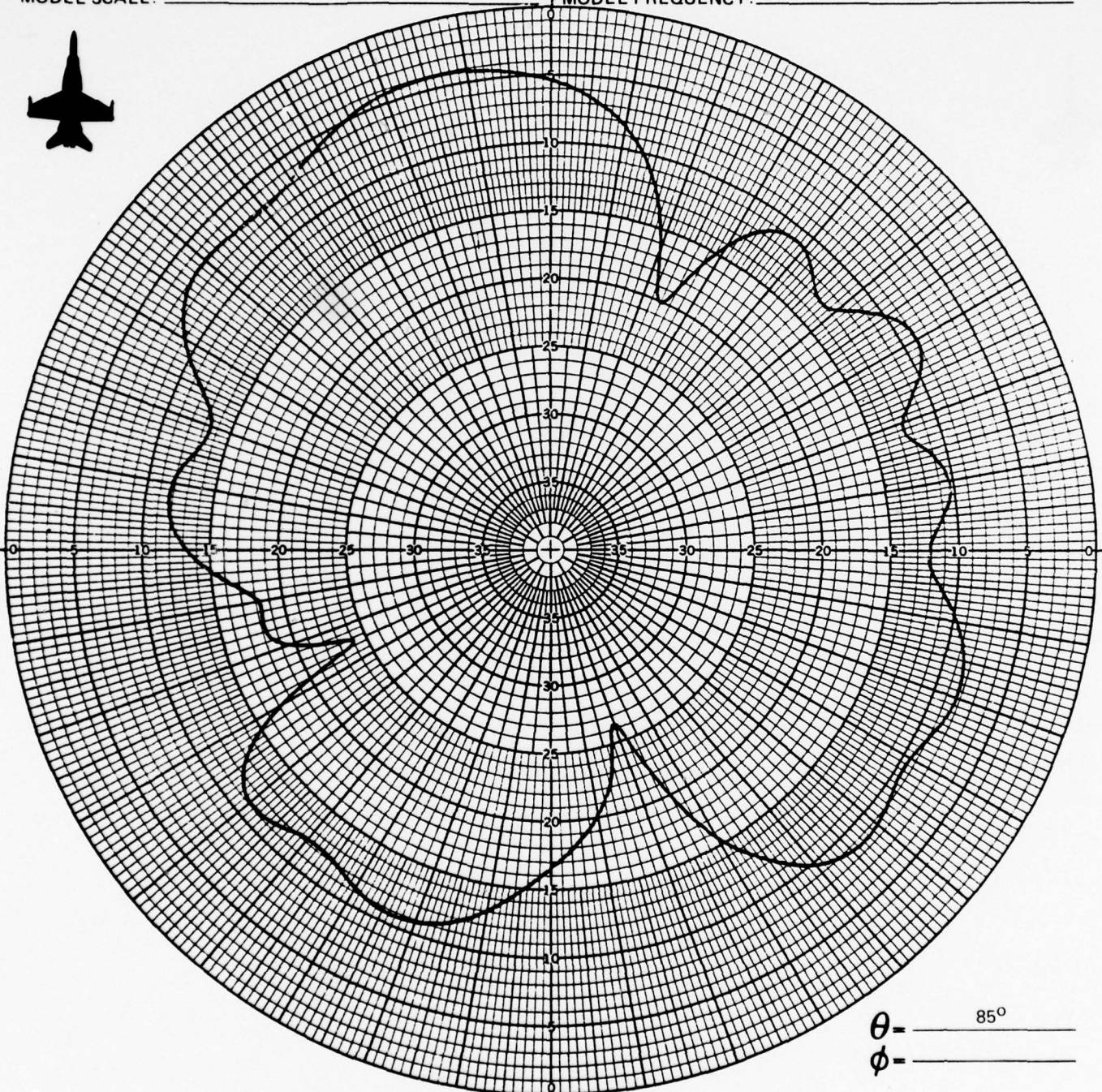
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/4

TEST IDENT.: 703-174 (F-18)
FULL SCALE FREQUENCY: 76 MHz
MODEL FREQUENCY: 304 MHz



θ = 85°
 ϕ = _____

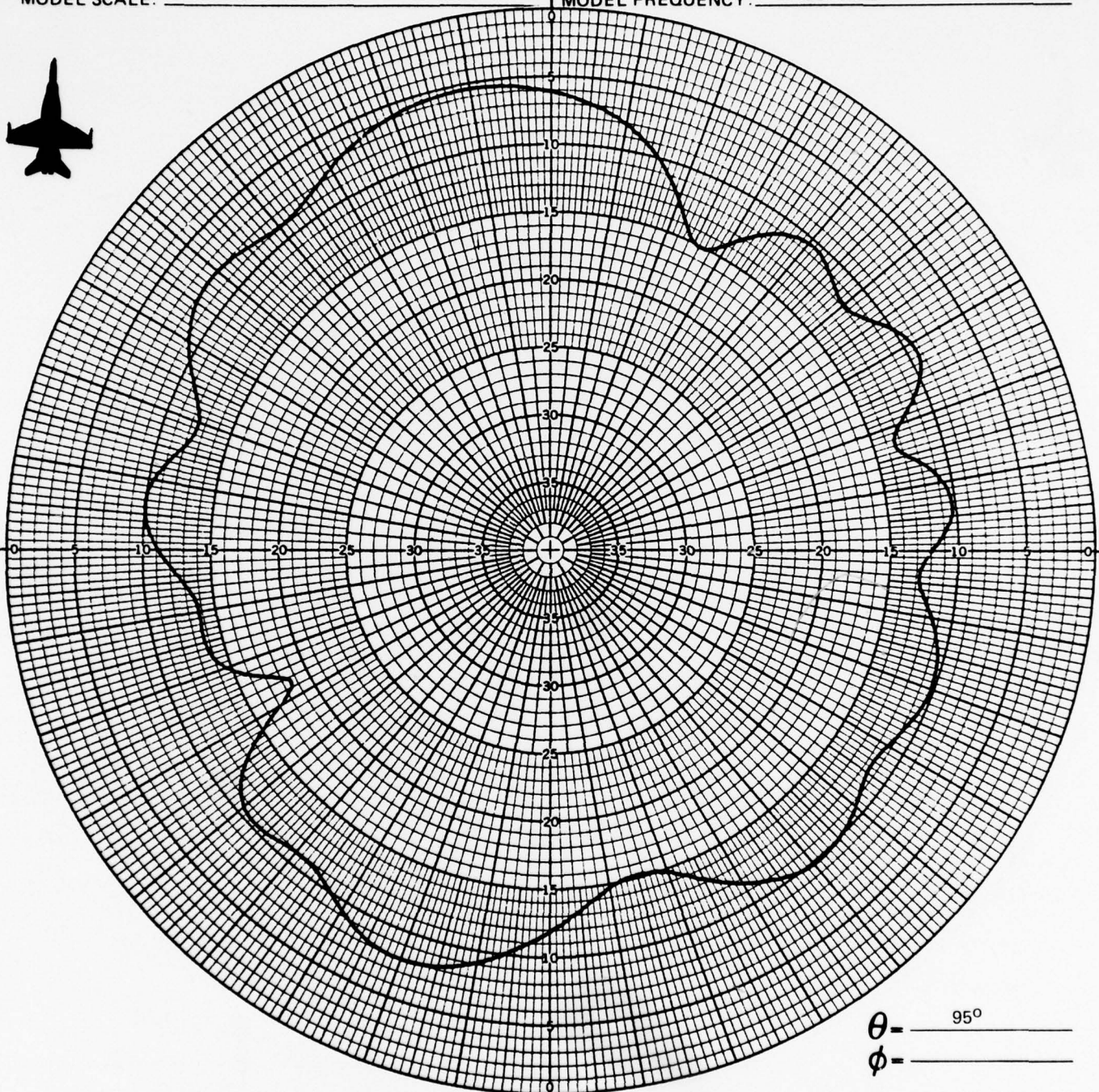
CONFIGURATION: 30
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: 285 FT
OBSERVER: PN, BM DATE: 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 76 MHz
MODEL FREQUENCY: _____ 304 MHz



θ = 95°
 ϕ = _____

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

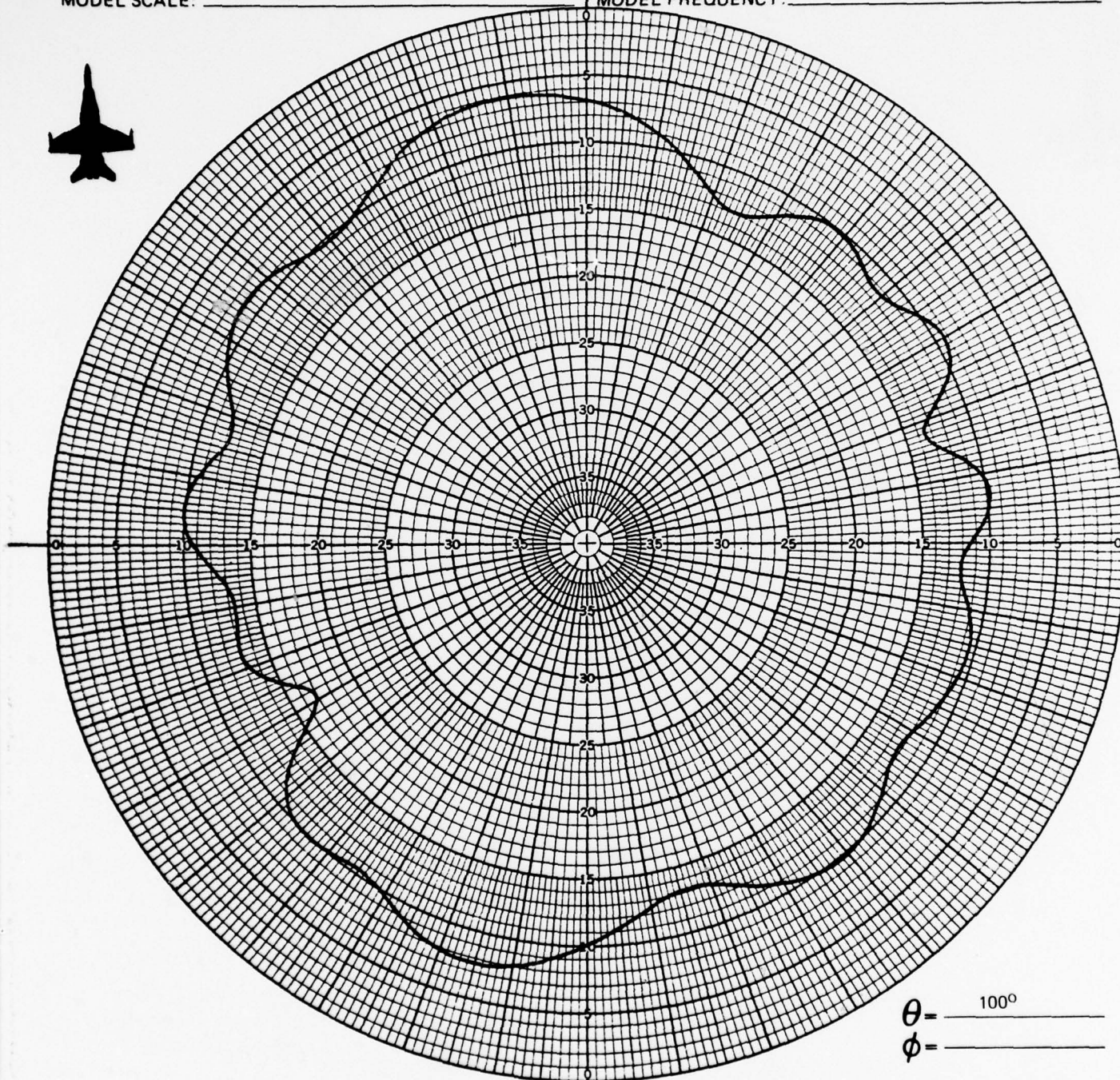
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 76 MHz
MODEL FREQUENCY: _____ 304 MHz



$\theta =$ _____ 100°
 $\phi =$ _____

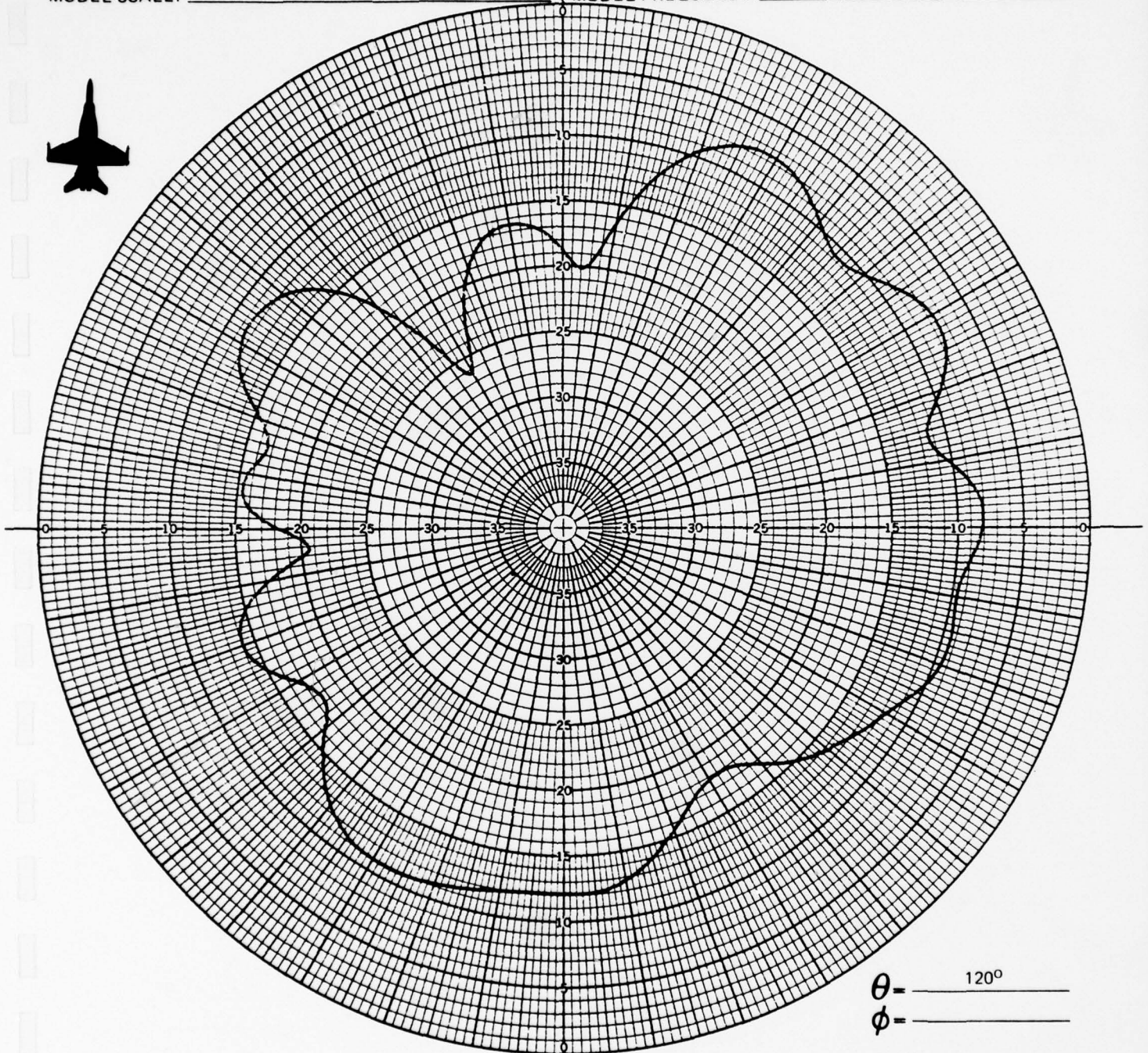
CONFIGURATION: _____ 30
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: _____ 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 76 MHz
MODEL FREQUENCY: _____ 304 MHz



θ - _____ 120°
 ϕ - _____

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

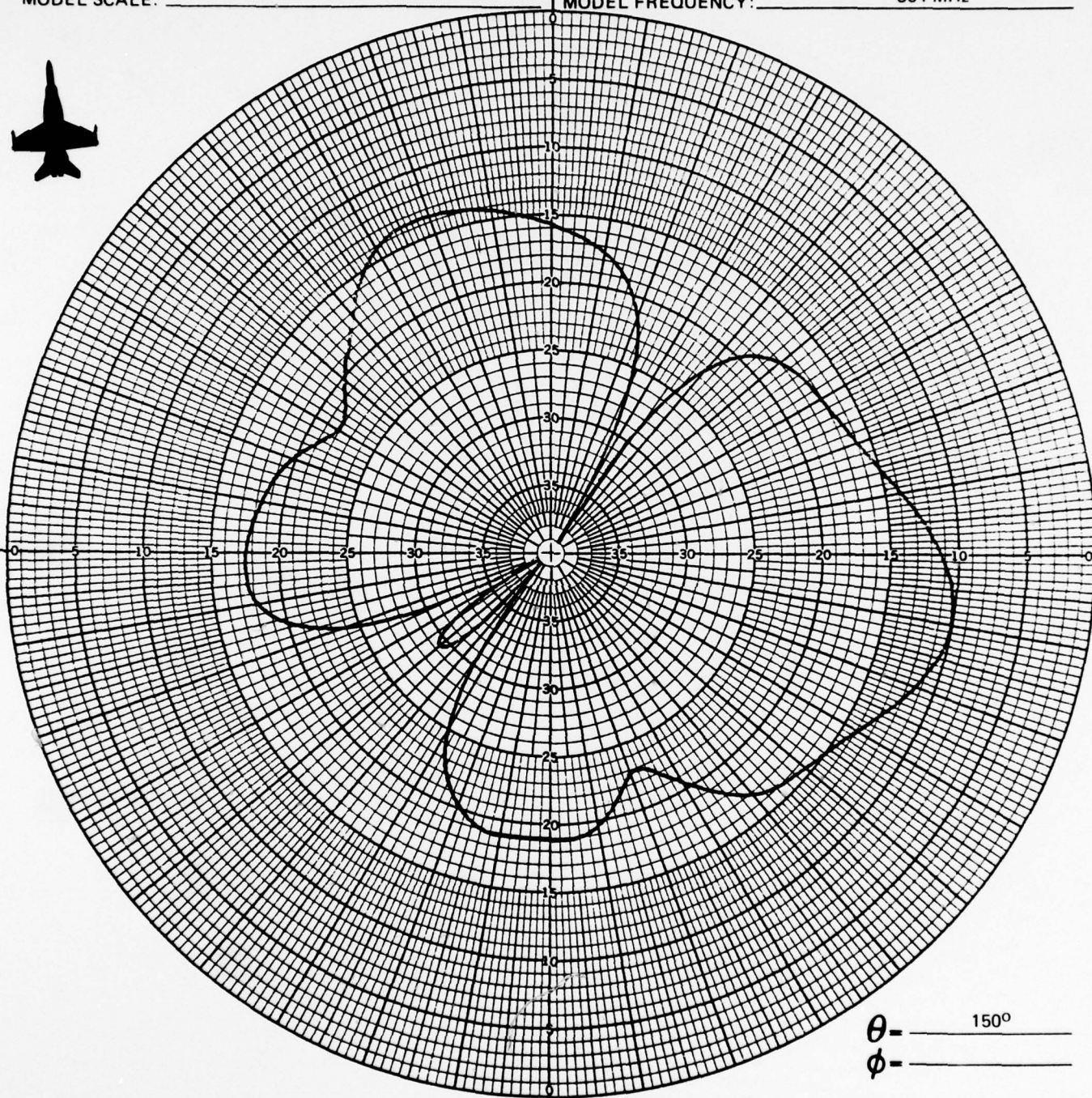
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 76 MHz
MODEL FREQUENCY: _____ 304 MHz



θ - _____ 150°
 ϕ - _____

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE

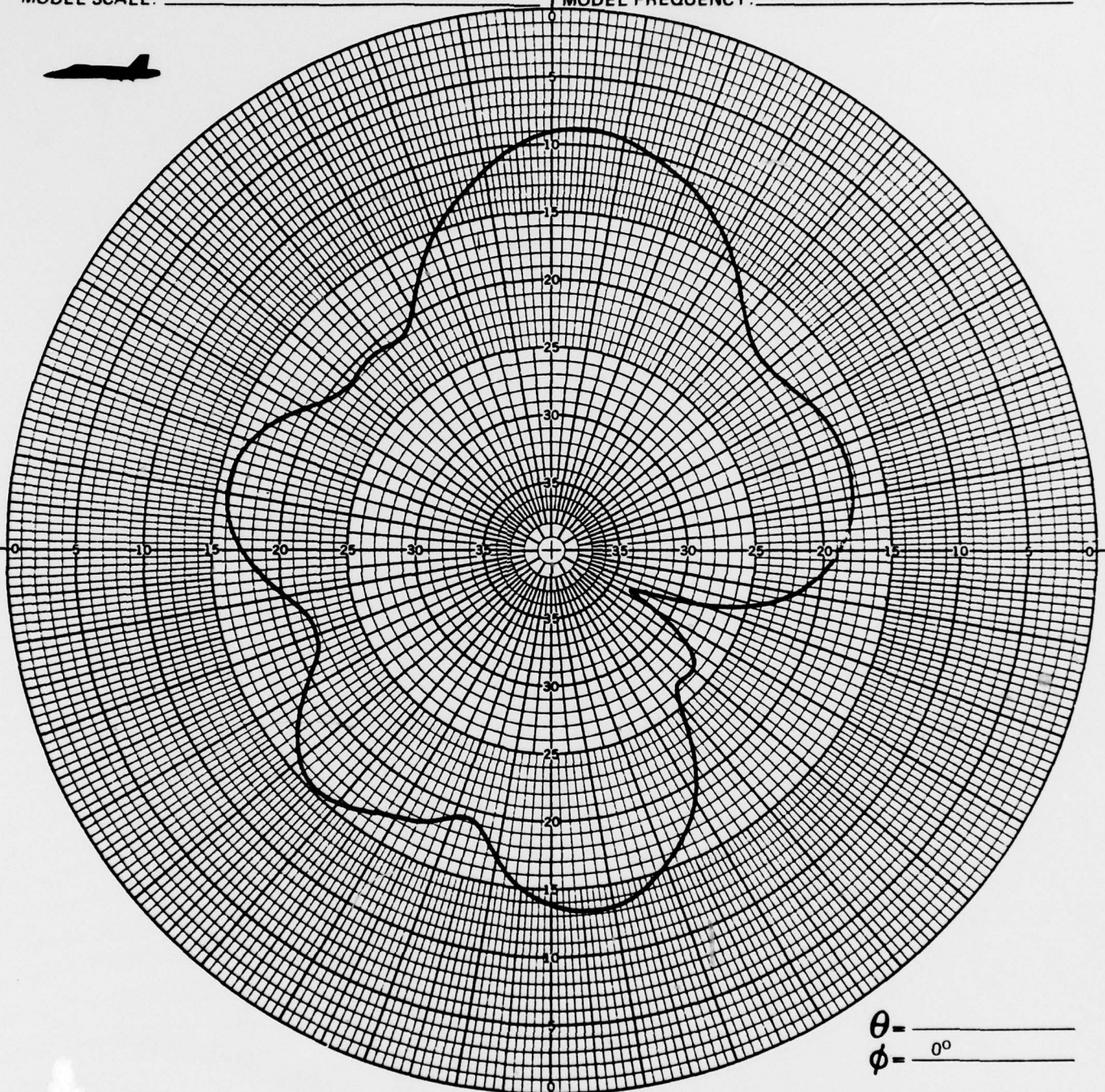
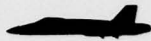
TEST IDENT.: _____ 703-174 (F-18)

ANTENNA LOCATION: _____ FINCAP

FULL SCALE FREQUENCY: _____ 76 MHz

MODEL SCALE: _____ 1/4

MODEL FREQUENCY: _____ 304 MHz



θ - _____
 ϕ - _____ 0°

CONFIGURATION: _____ 30

INTEGRATOR COUNT: _____

REMARKS: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

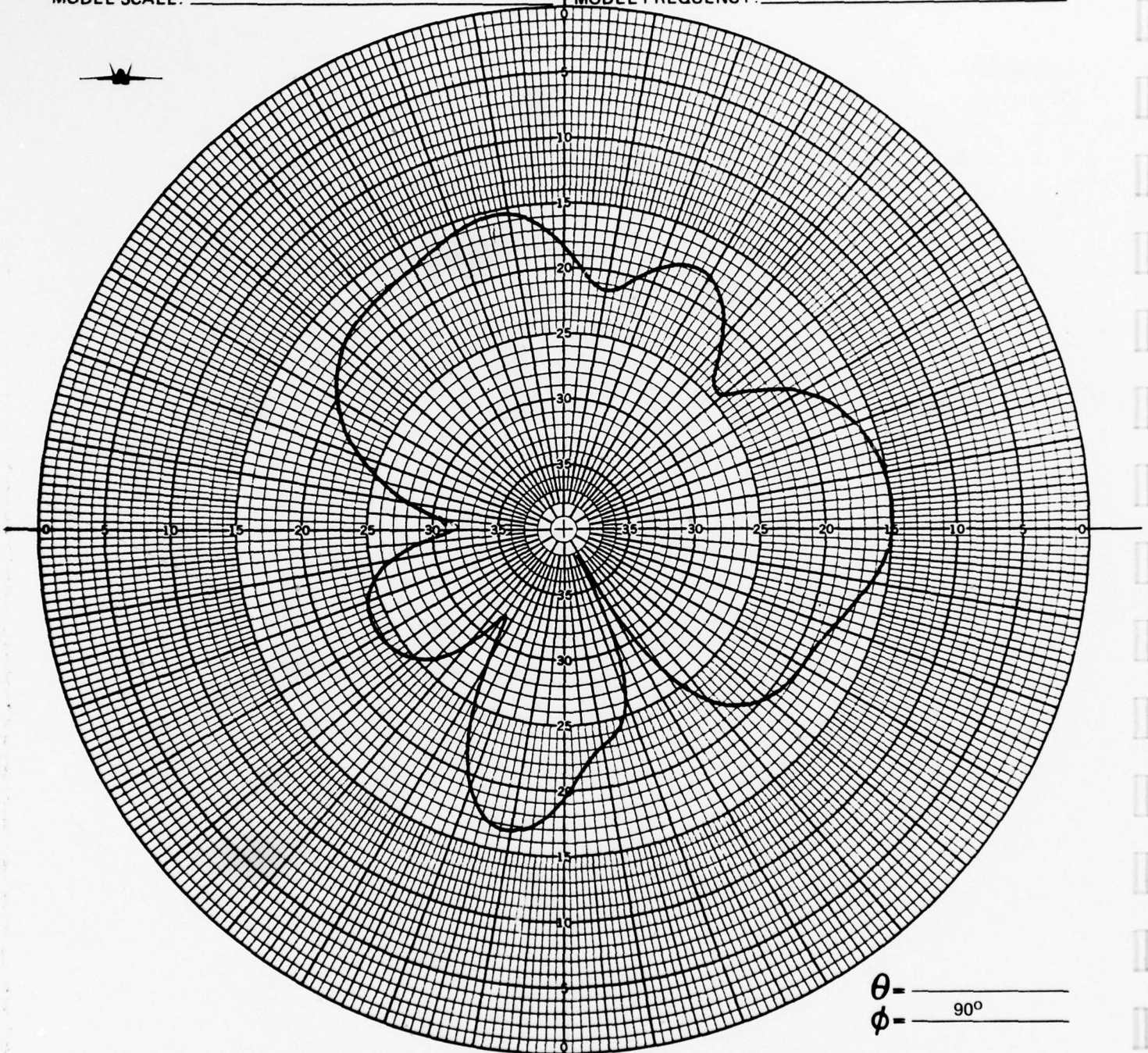
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 76 MHz
MODEL FREQUENCY: _____ 304 MHz



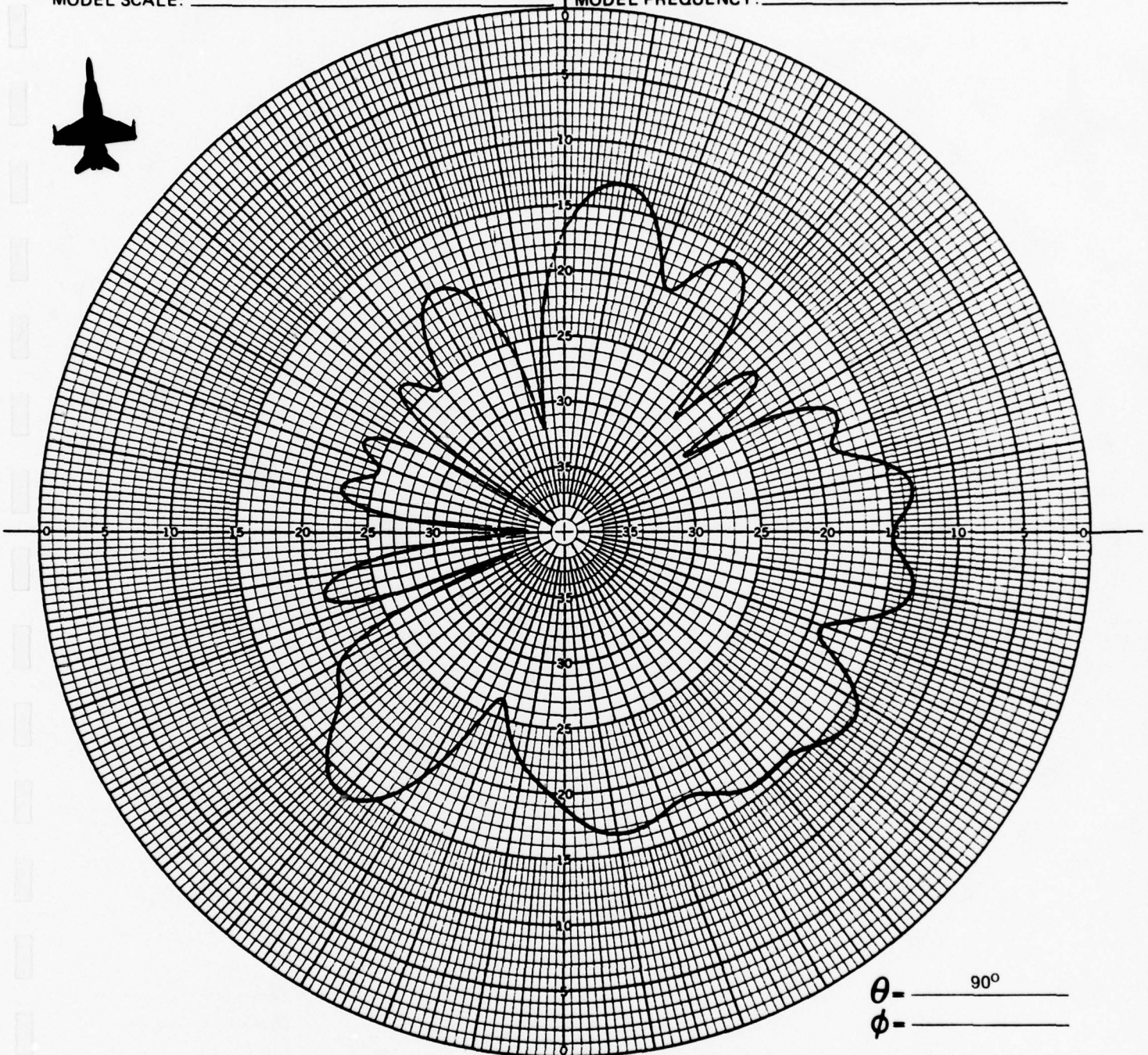
CONFIGURATION: _____ 30
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: _____ 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/4

TEST IDENT.: 703-174 (F-18)
FULL SCALE FREQUENCY: 76 MHz
MODEL FREQUENCY: 304 MHz



θ - 90°
 ϕ - _____

CONFIGURATION: 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 4-29-77

ANTENNA: FLYING PROTOTYPE

ANTENNA LOCATION: FINCAP

MODEL SCALE: 1/4

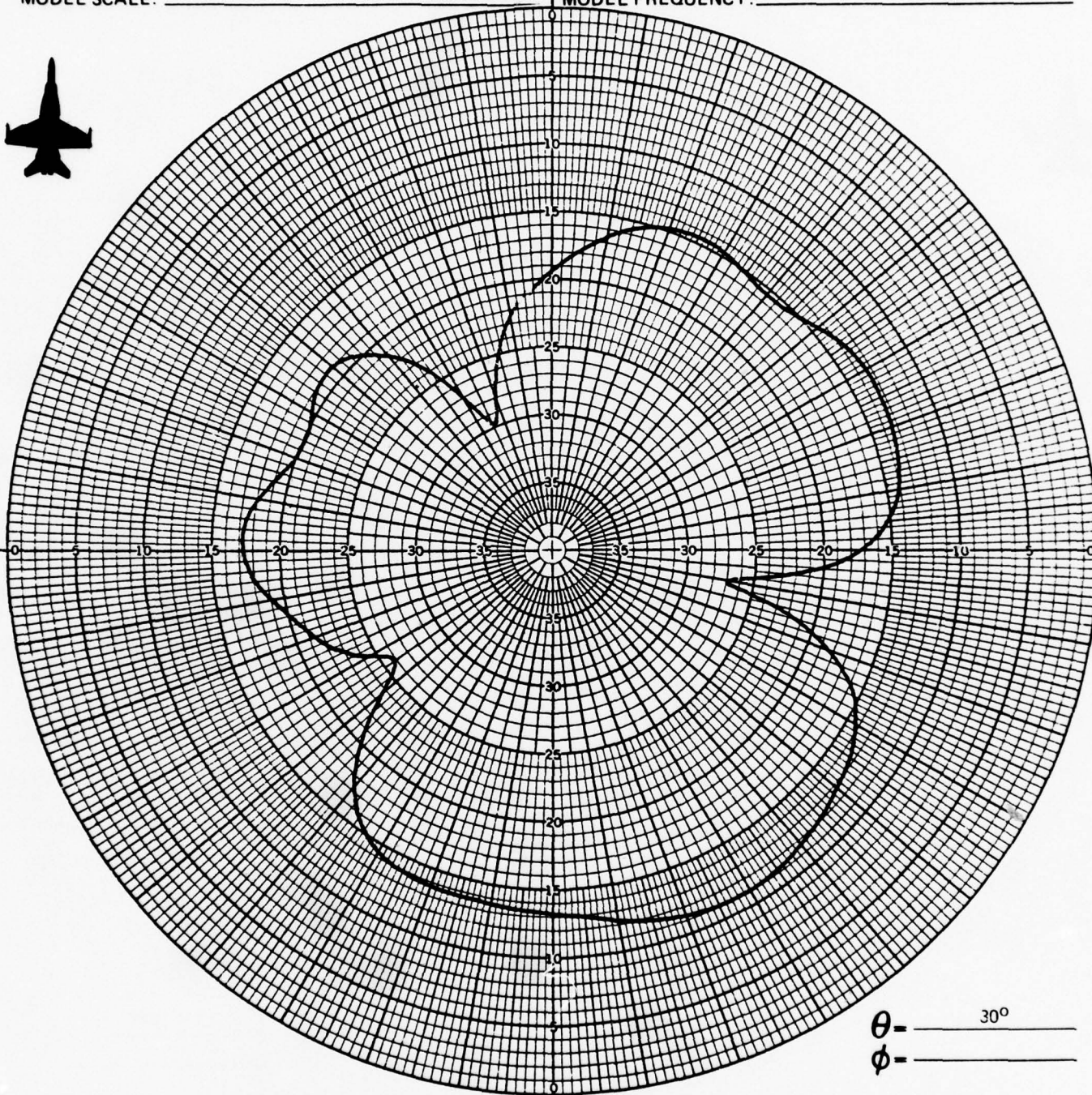
DOCUMENT

REVISION

TEST IDENT.: 703-174 (F-18)

FULL SCALE FREQUENCY: 76 MHz

MODEL FREQUENCY: 304 MHz



θ - 30°
 ϕ -

CONFIGURATION: 30

REMARKS:

INTEGRATOR COUNT:

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER:

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: 285 FT

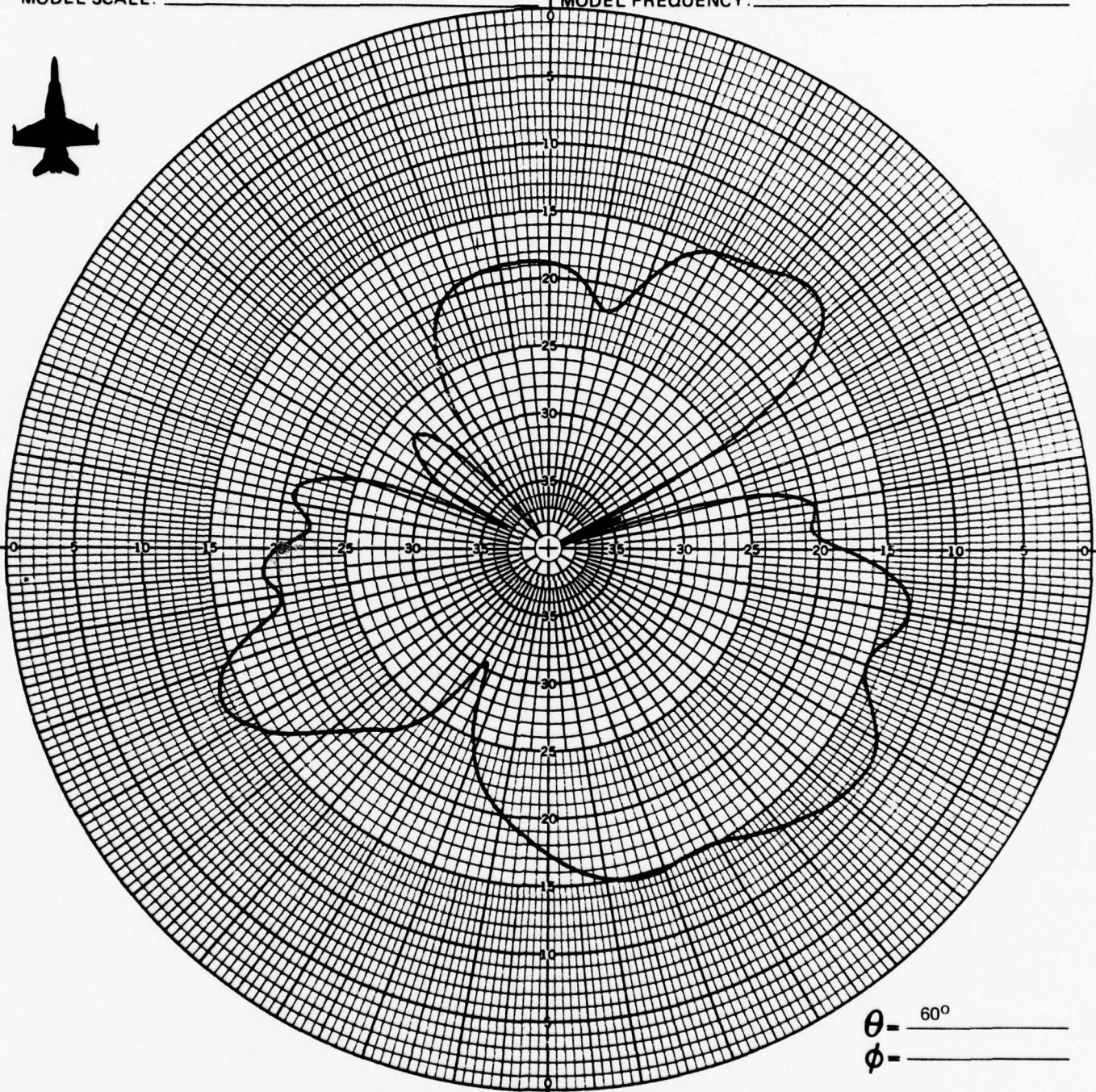
OBSERVER: PN, BM

DATE: 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 76 MHz
MODEL FREQUENCY: _____ 304 MHz



θ - 60°
 ϕ - _____

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

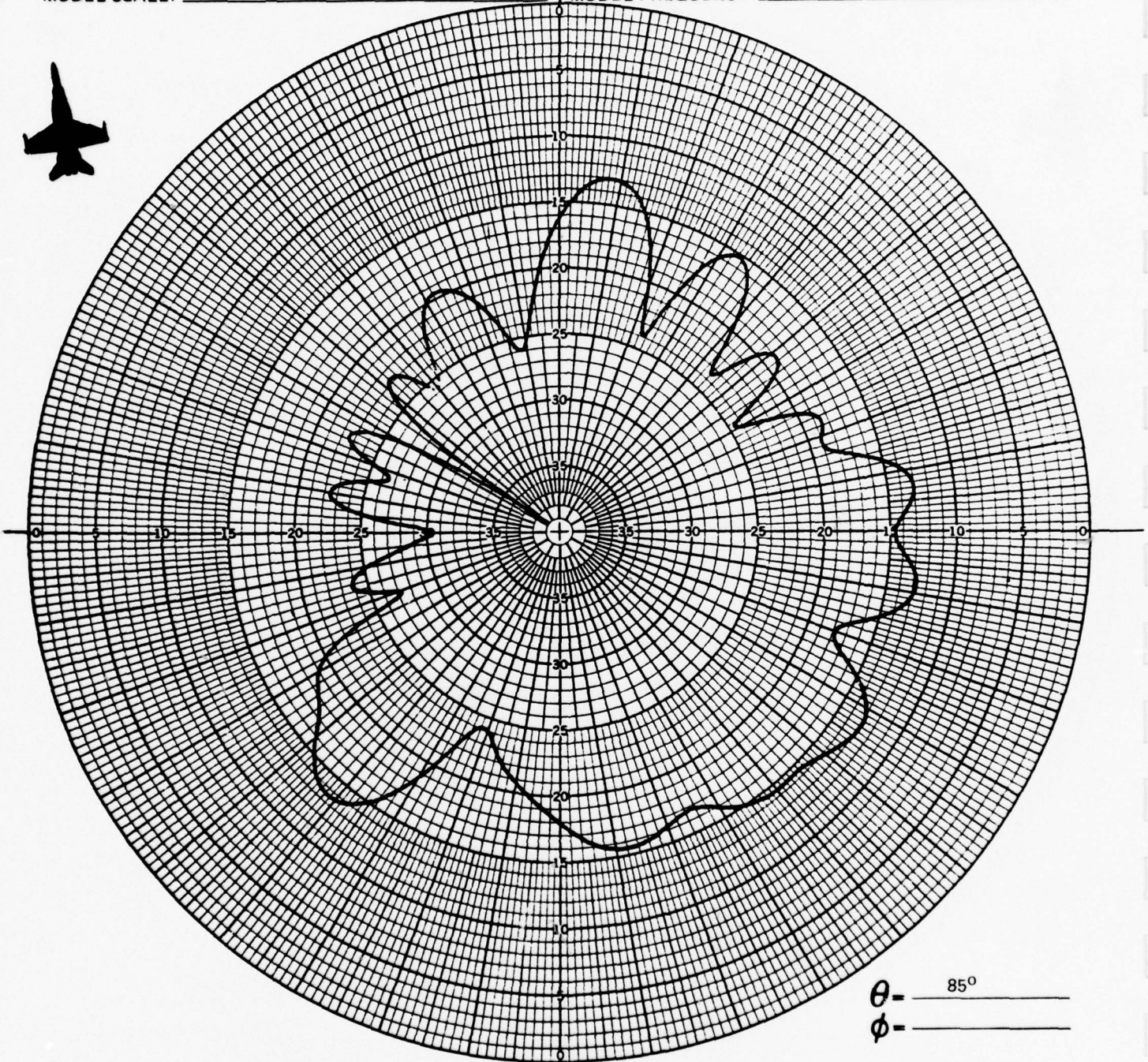
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 76 MHz
MODEL FREQUENCY: _____ 304 MHz



θ - 85°
 ϕ - _____

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: E ☒ ϕ ☐ E θ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

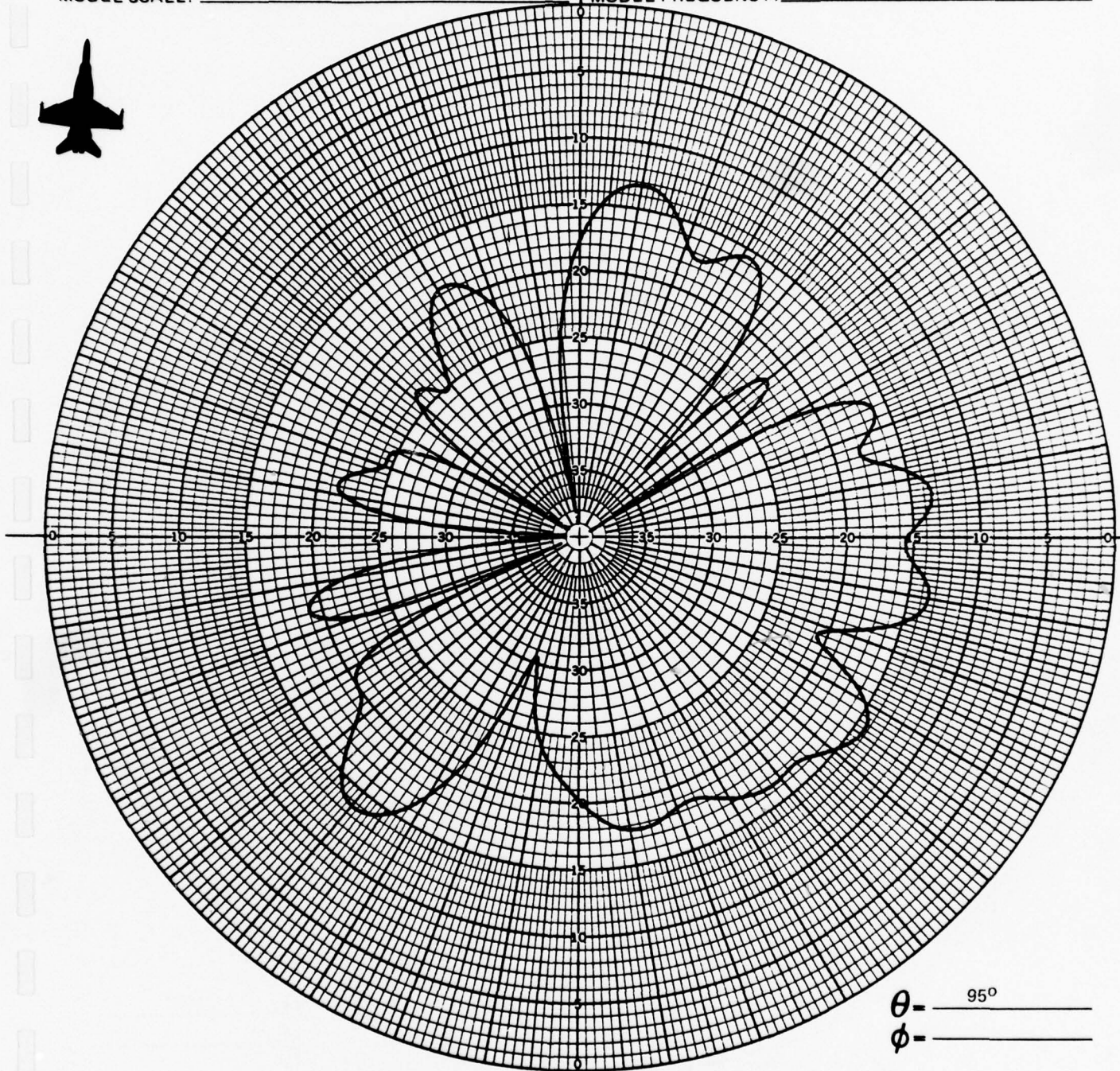
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM _____ DATE: _____ 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 76 MHz
MODEL FREQUENCY: _____ 304 MHz



θ - _____ 95°
 ϕ - _____

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE

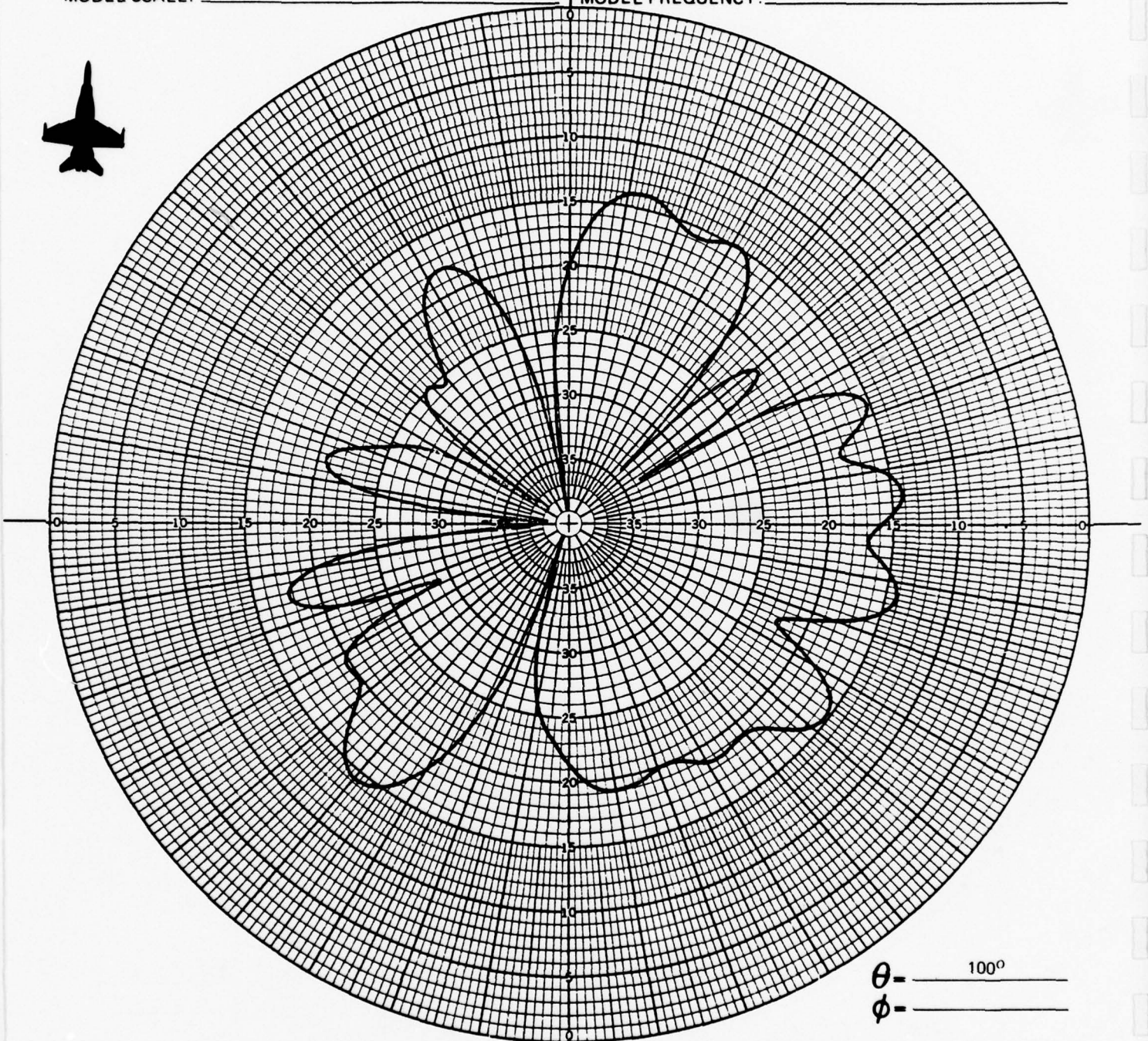
ANTENNA LOCATION: _____ FINCAP

MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)

FULL SCALE FREQUENCY: _____ 76 MHz

MODEL FREQUENCY: _____ 304 MHz



θ - _____ 100°
 ϕ - _____

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

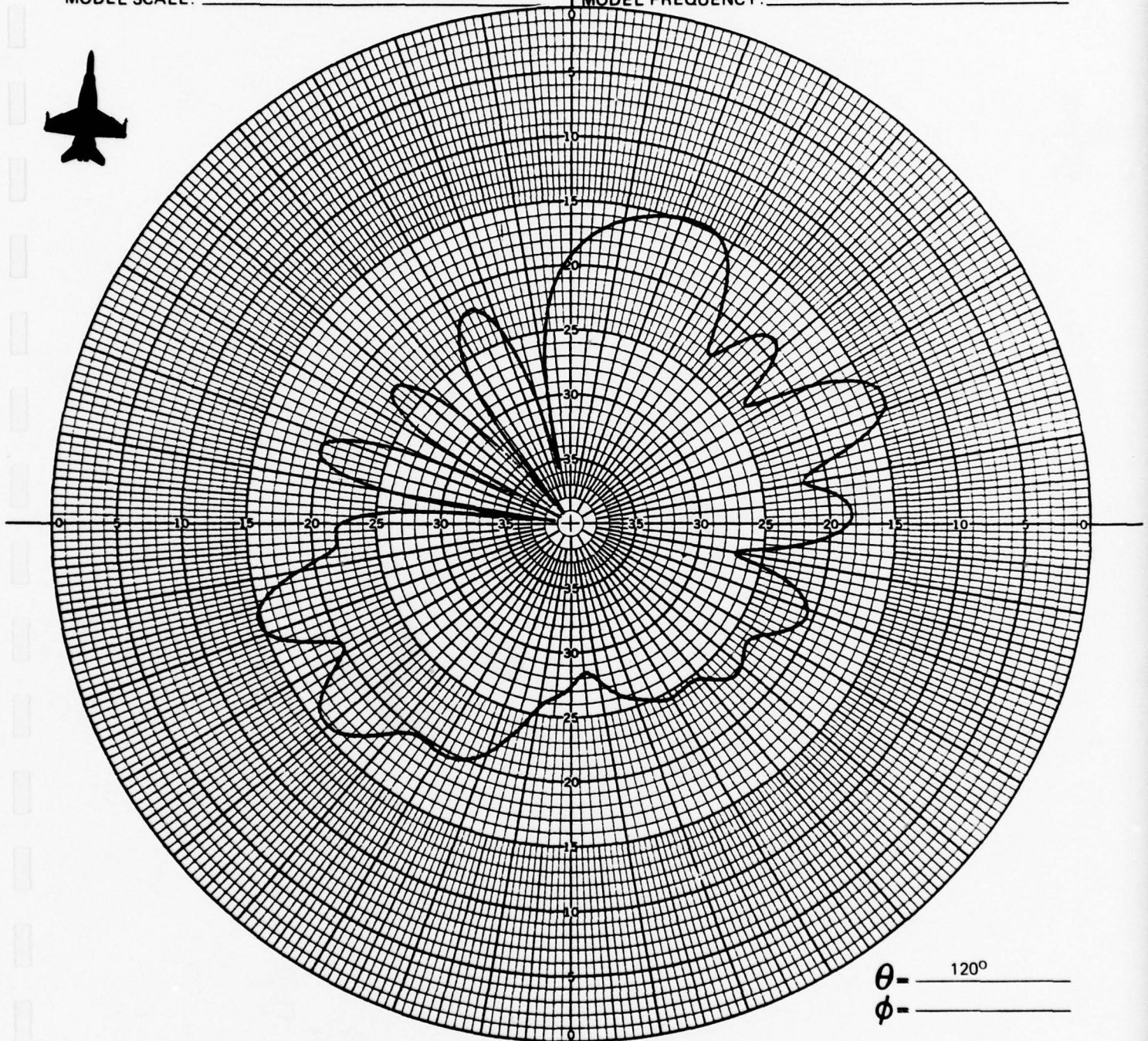
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM _____ DATE: _____ 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 76 MHz
MODEL FREQUENCY: _____ 304 MHz



θ - _____ 120°
 ϕ - _____

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

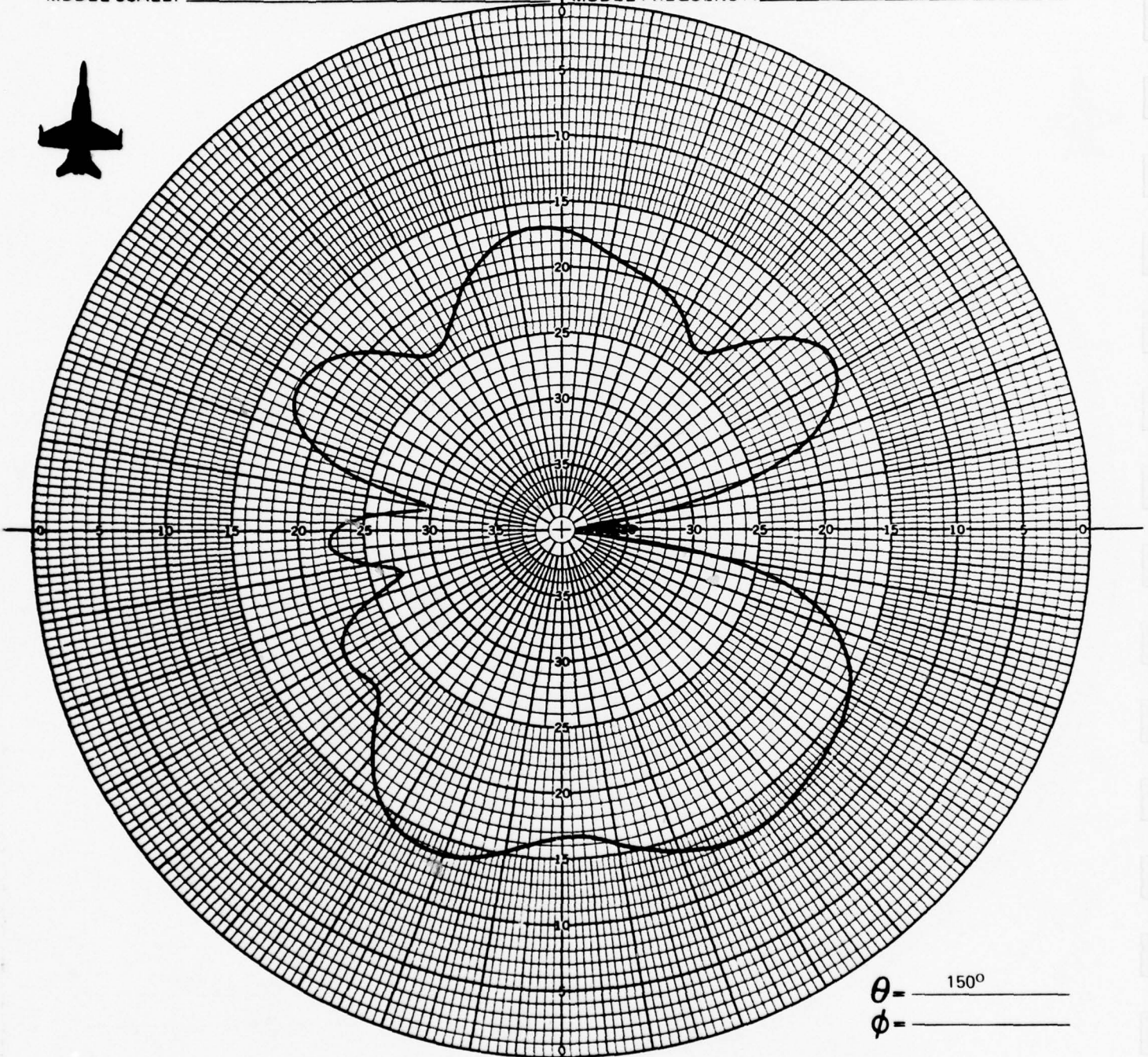
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 76 MHz
MODEL FREQUENCY: _____ 304 MHz



θ = _____ 150°
 ϕ = _____

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

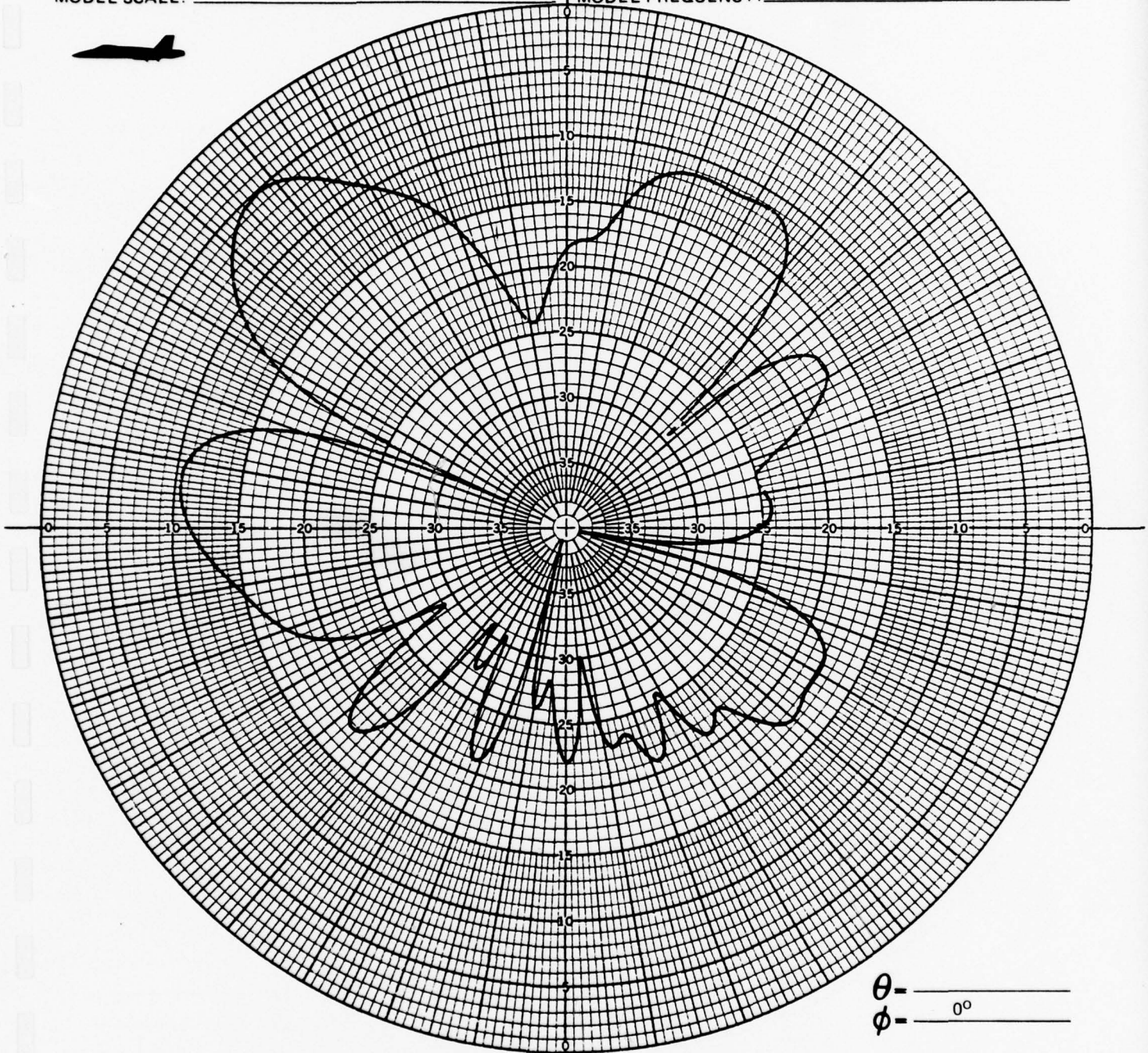
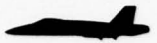
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/4

TEST IDENT.: 703-174 (F-18)
FULL SCALE FREQUENCY: 104 MHz
MODEL FREQUENCY: 416 MHz



θ - _____
 ϕ - 0°

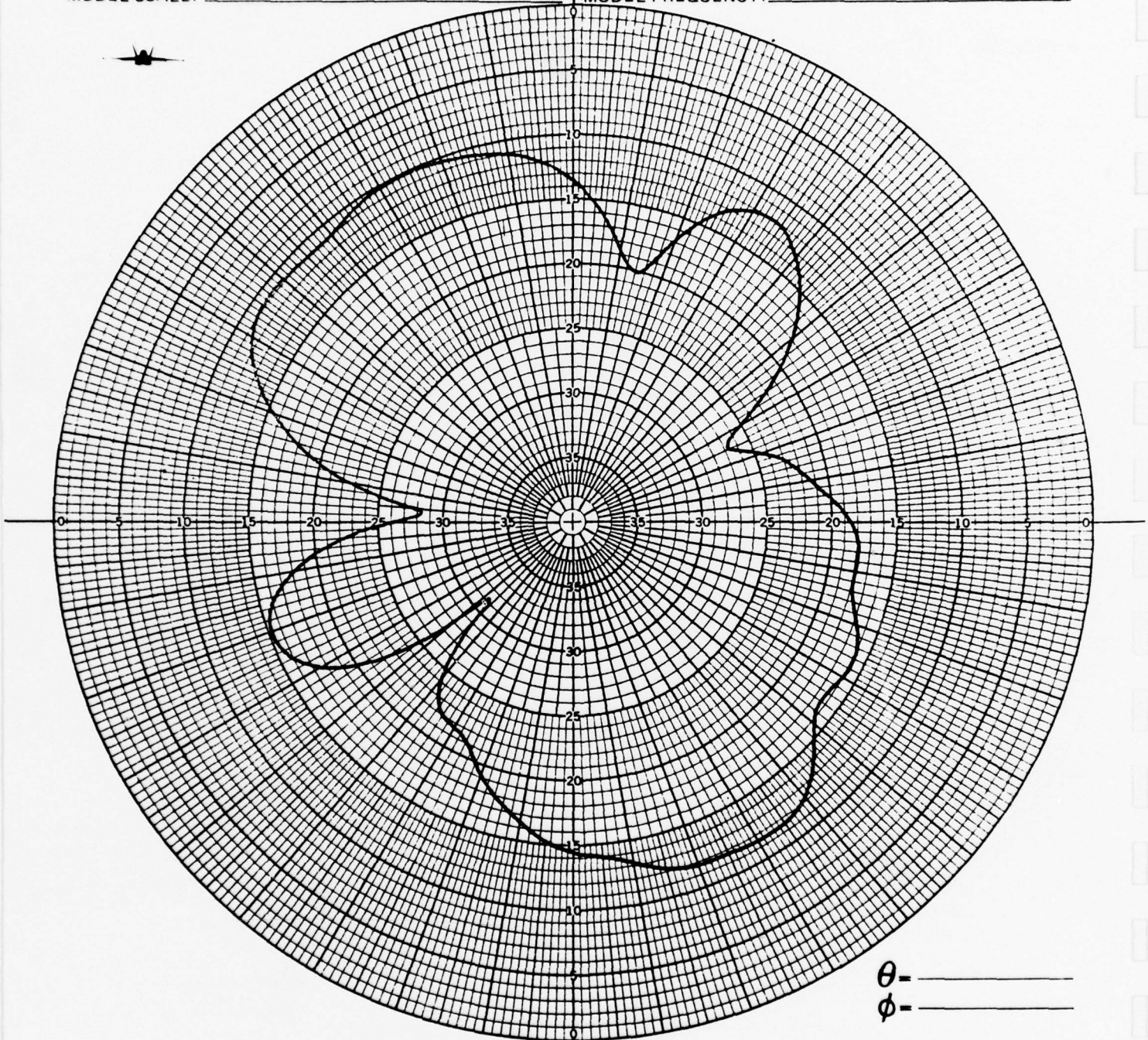
CONFIGURATION: 30
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: ☒ $E\phi$ ☐ $E\theta$ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: 285 FT
OBSERVER: PN, BM DATE: 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 104 MHz
MODEL FREQUENCY: _____ 416 MHz



CONFIGURATION: _____ 30
REMARKS: _____

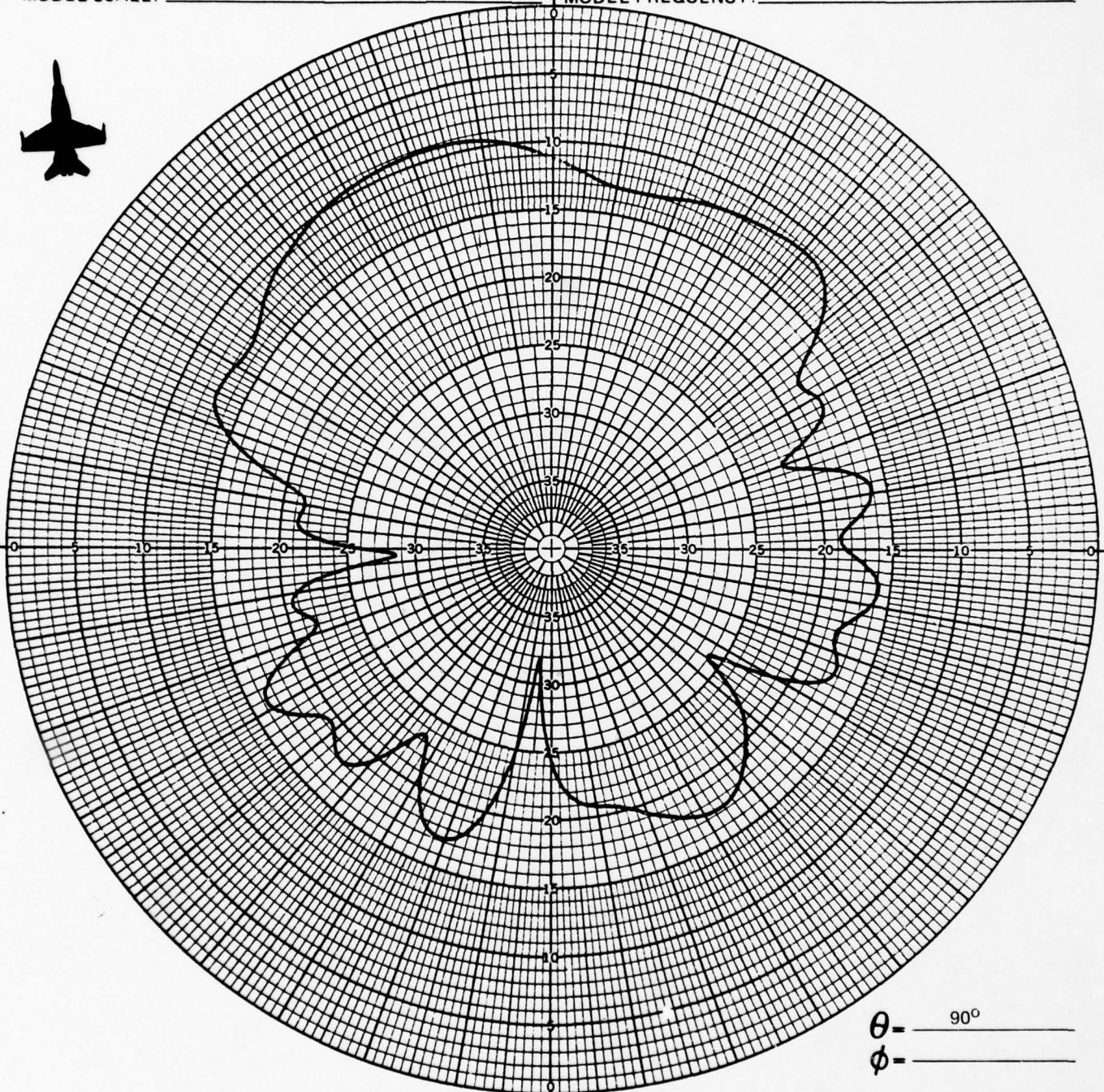
INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: _____ 4-29-77

θ - _____
 ϕ - _____

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 104 MHz
MODEL FREQUENCY: _____ 416 MHz



θ - _____ 90°
 ϕ - _____

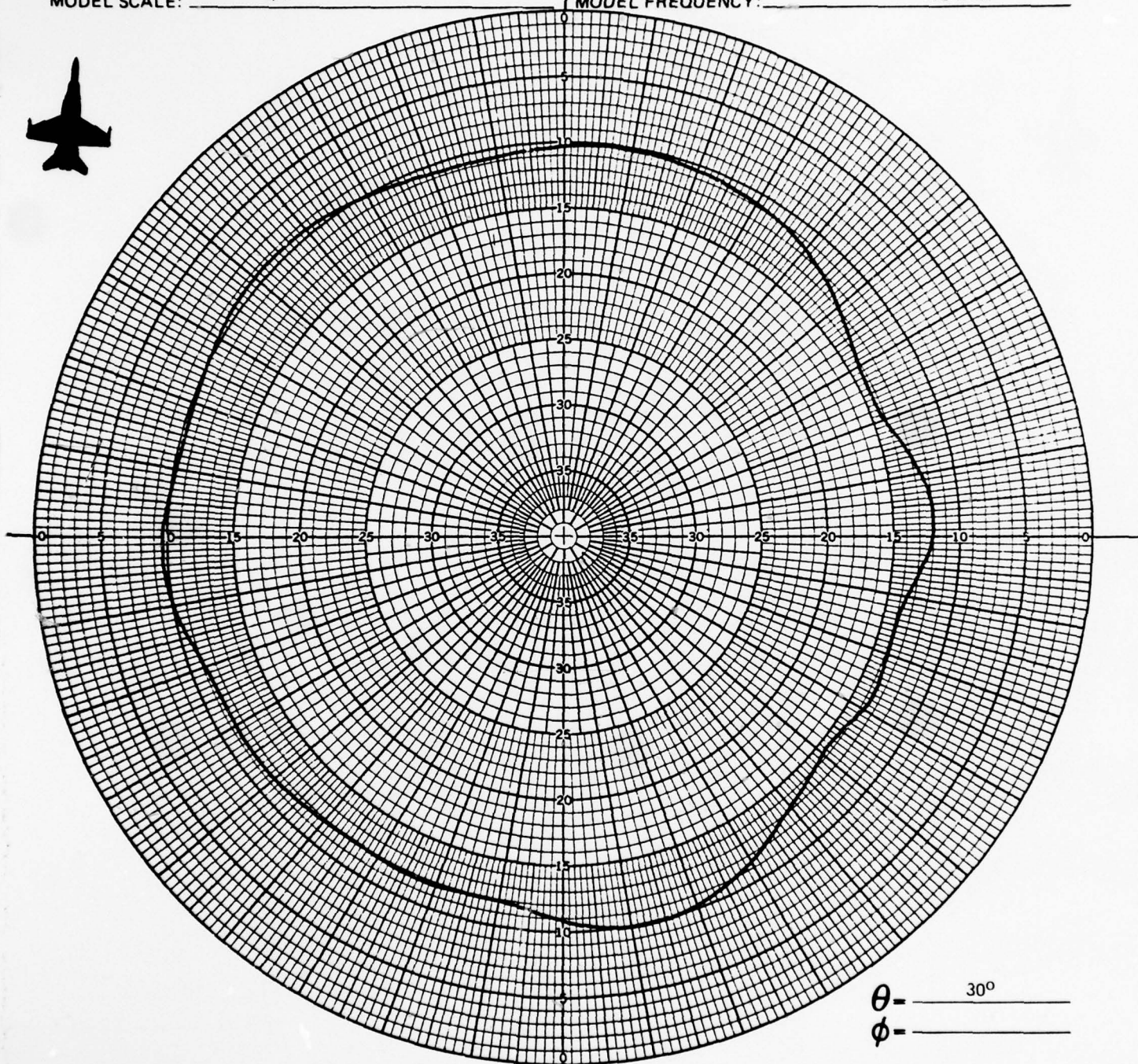
CONFIGURATION: _____ 30
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: _____ 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 104 MHz
MODEL FREQUENCY: _____ 416 MHz



θ - _____ 30°
 ϕ - _____

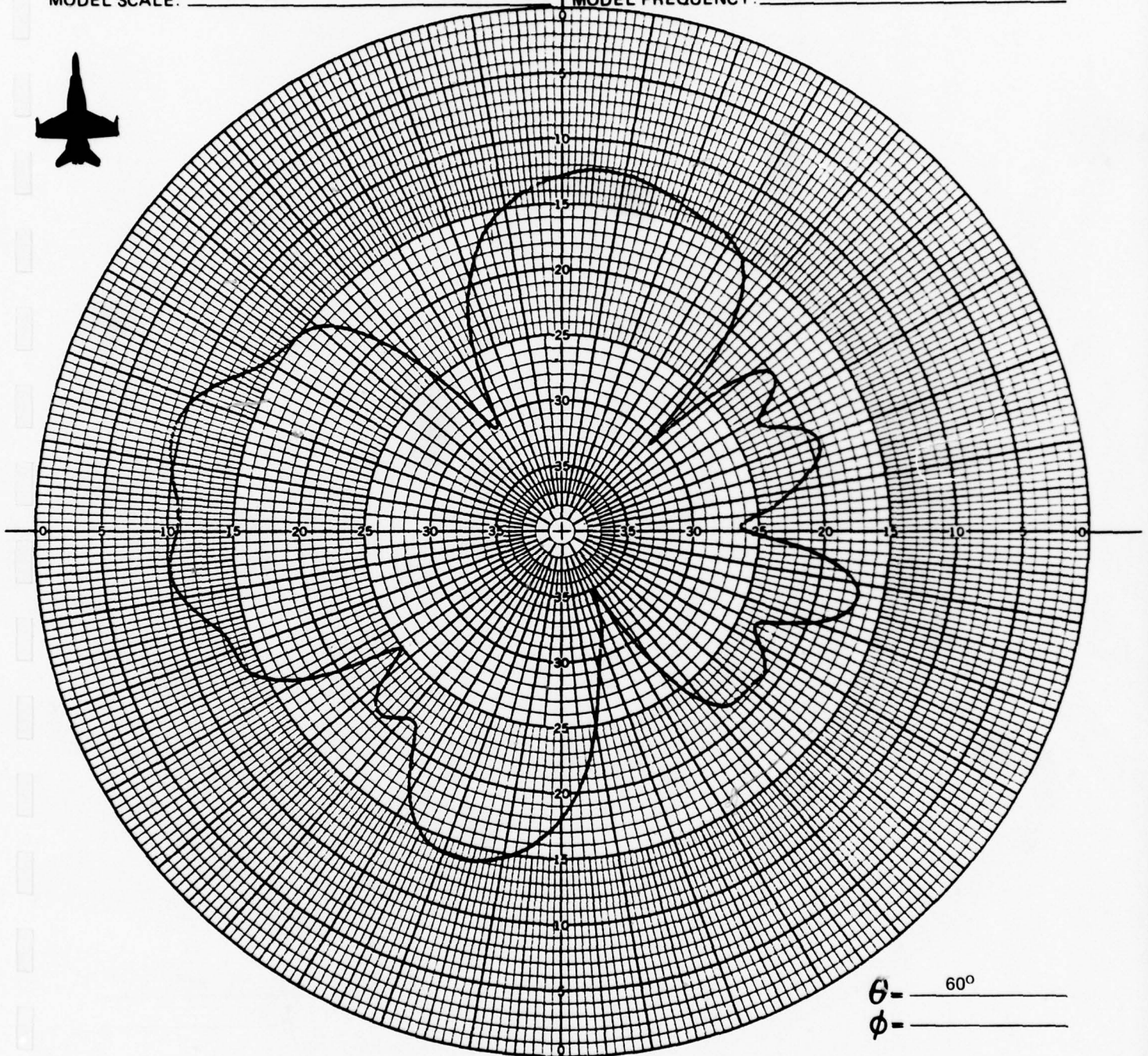
CONFIGURATION: _____ 30
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: _____ 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 104 MHz
MODEL FREQUENCY: _____ 416 MHz



θ - 60°
 ϕ -

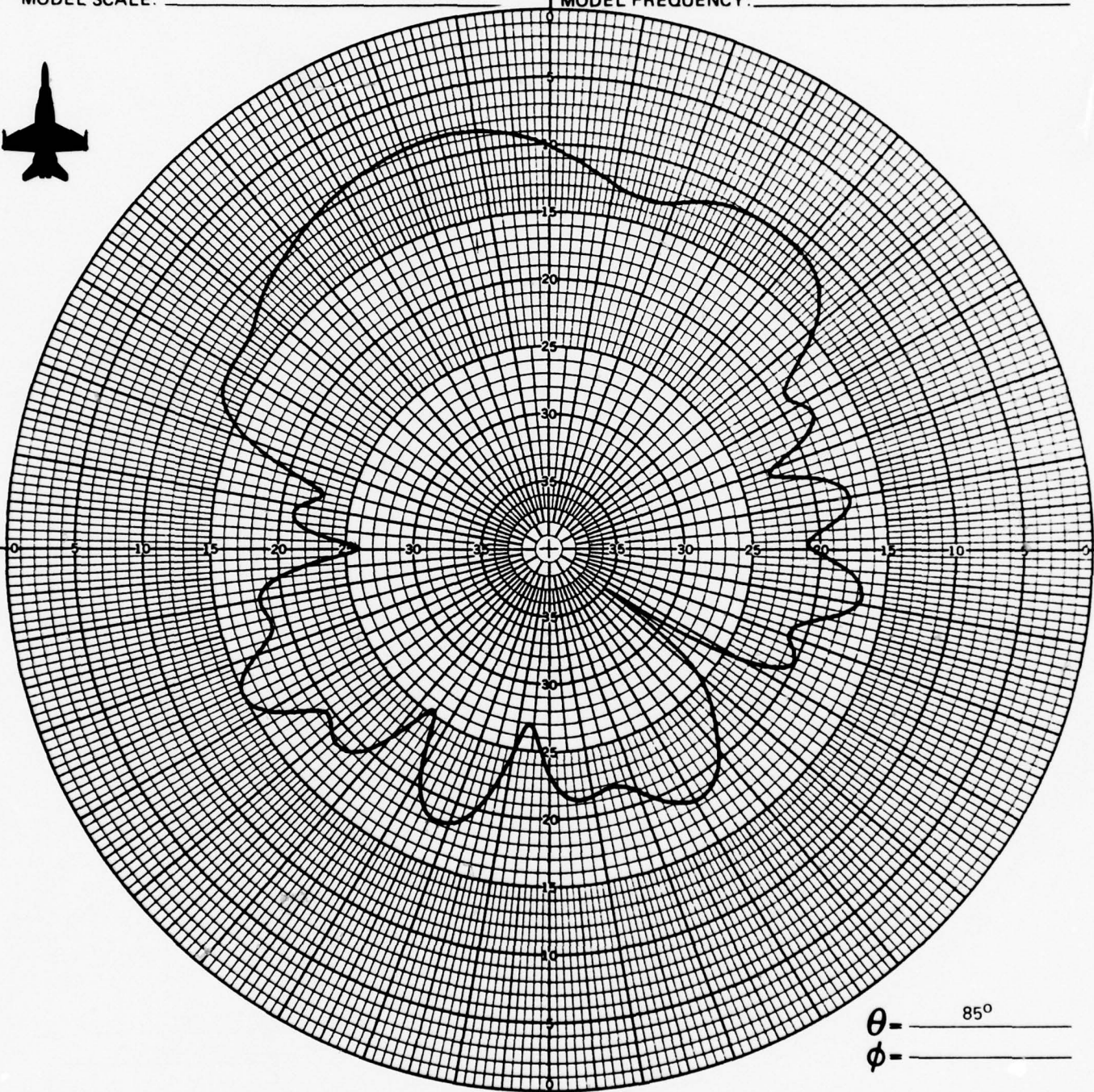
CONFIGURATION: _____ 30
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: _____ 4-29-77

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/4

DOCUMENT _____
REVISION _____

TEST IDENT.: 703-174 (F-18)
FULL SCALE FREQUENCY: 104 MHz
MODEL FREQUENCY: 416 MHz



θ - 85°
 ϕ - _____

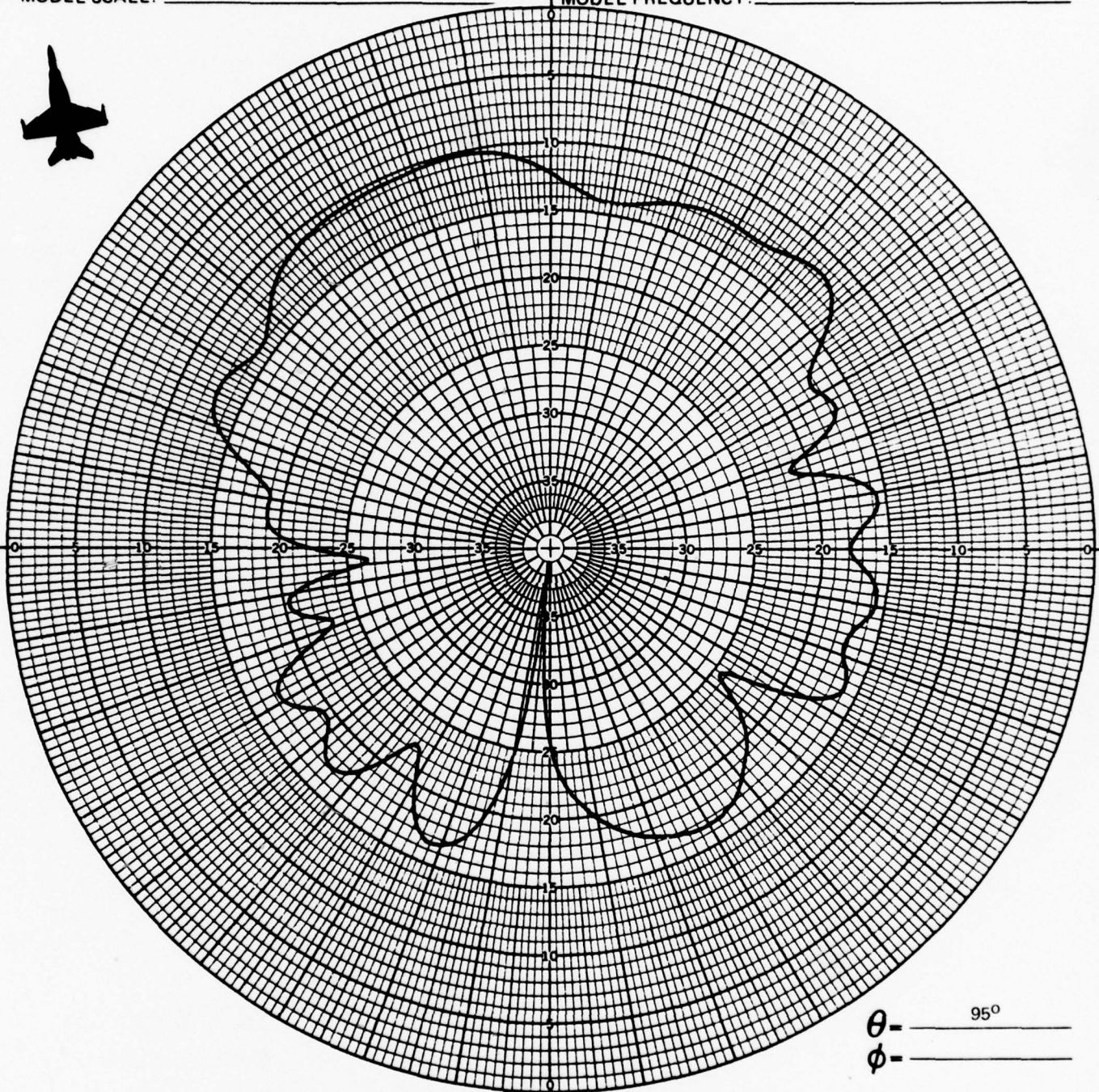
CONFIGURATION: 30
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: 285 FT
OBSERVER: PN, BM DATE: 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 104 MHz
MODEL FREQUENCY: _____ 416 MHz



θ - _____ 95°
 ϕ - _____

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

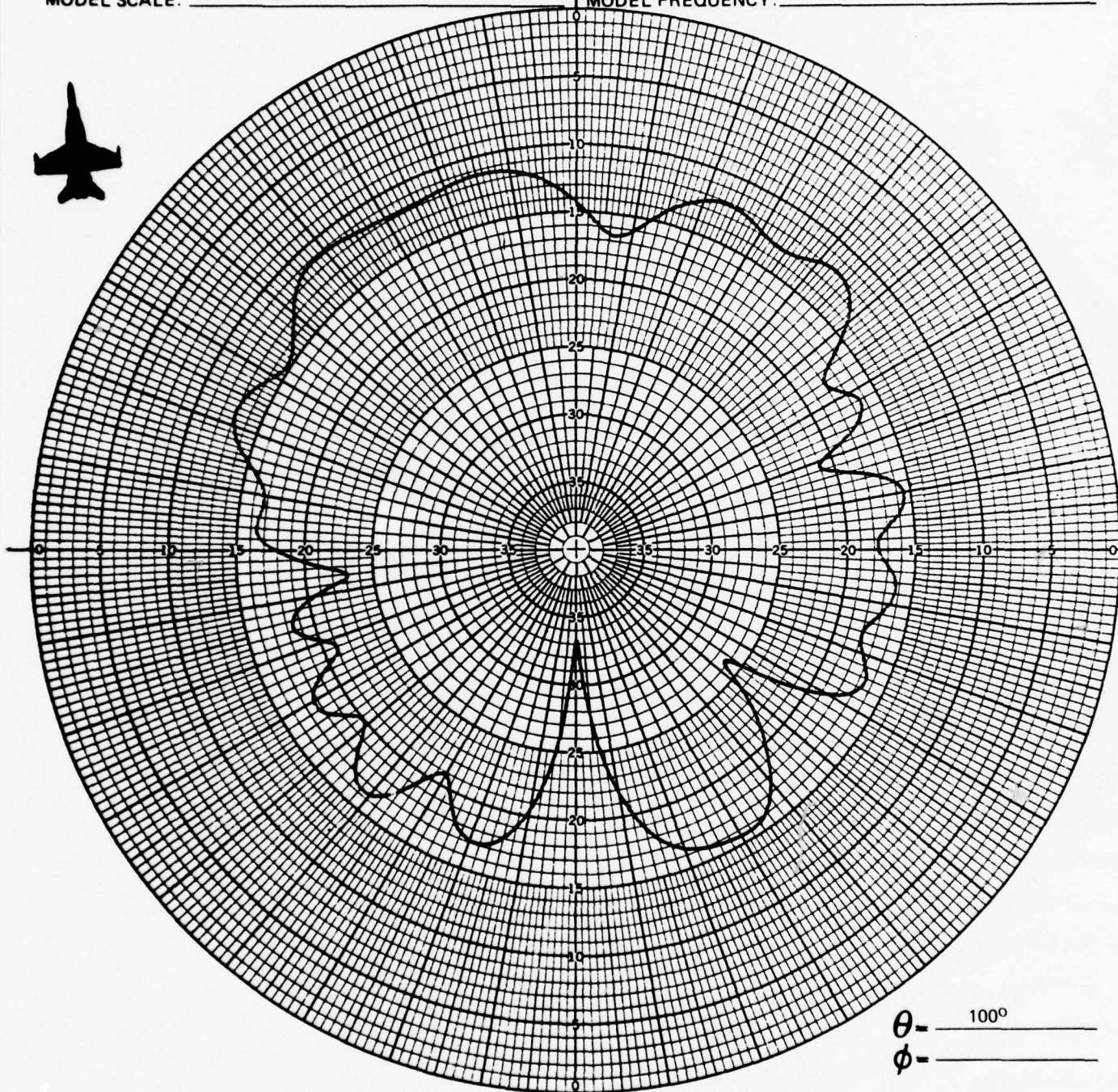
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/4

TEST IDENT.: 703-174 (F-18)
FULL SCALE FREQUENCY: 104 MHz
MODEL FREQUENCY: 416 MHz



θ - 100°
 ϕ - _____

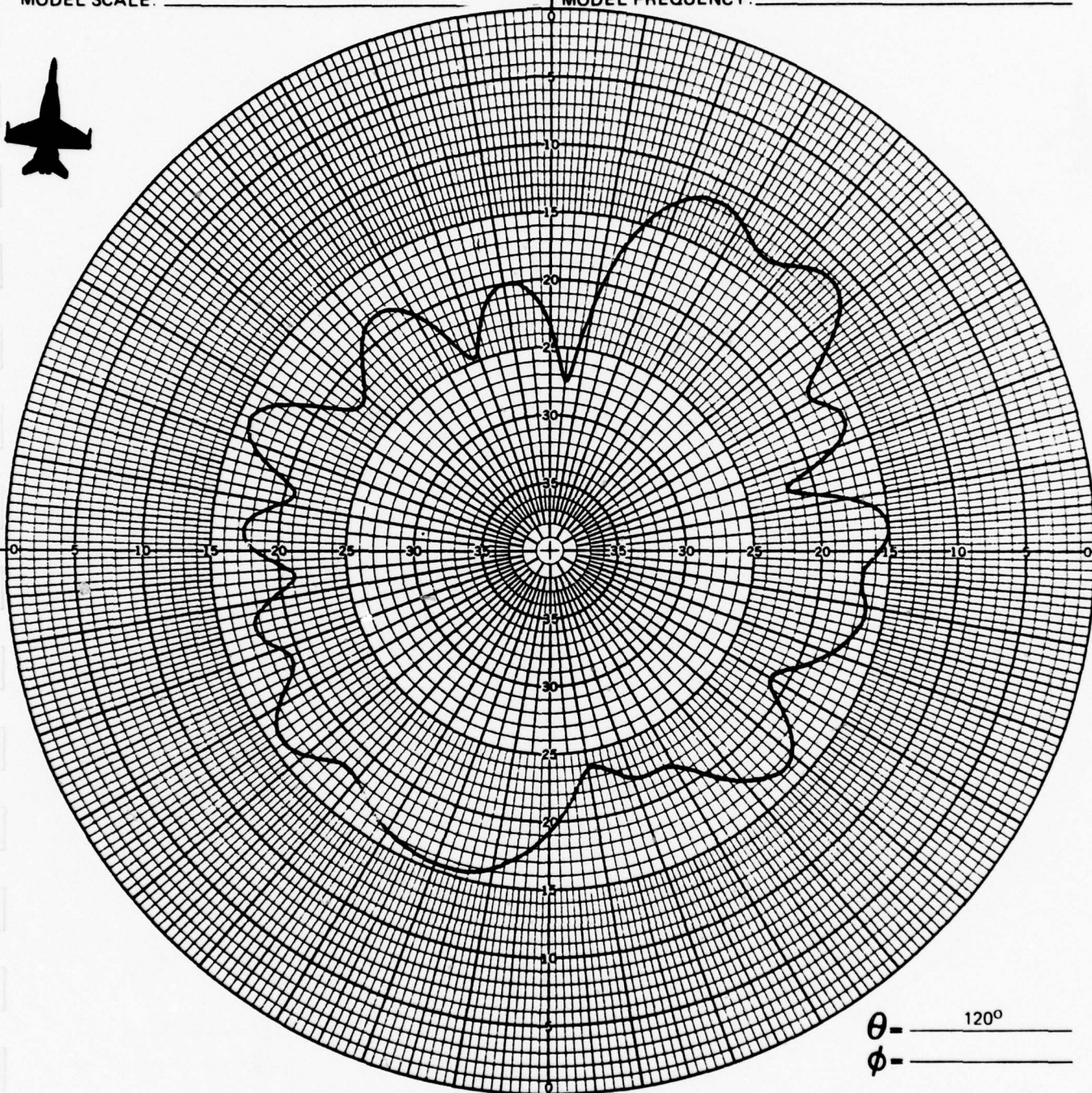
CONFIGURATION: 30
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: ☒ $E\phi$ ☐ $E\theta$ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: 285 FT
OBSERVER: PN, BM DATE: 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 104 MHz
MODEL FREQUENCY: _____ 416 MHz



θ - _____ 120°
 ϕ - _____

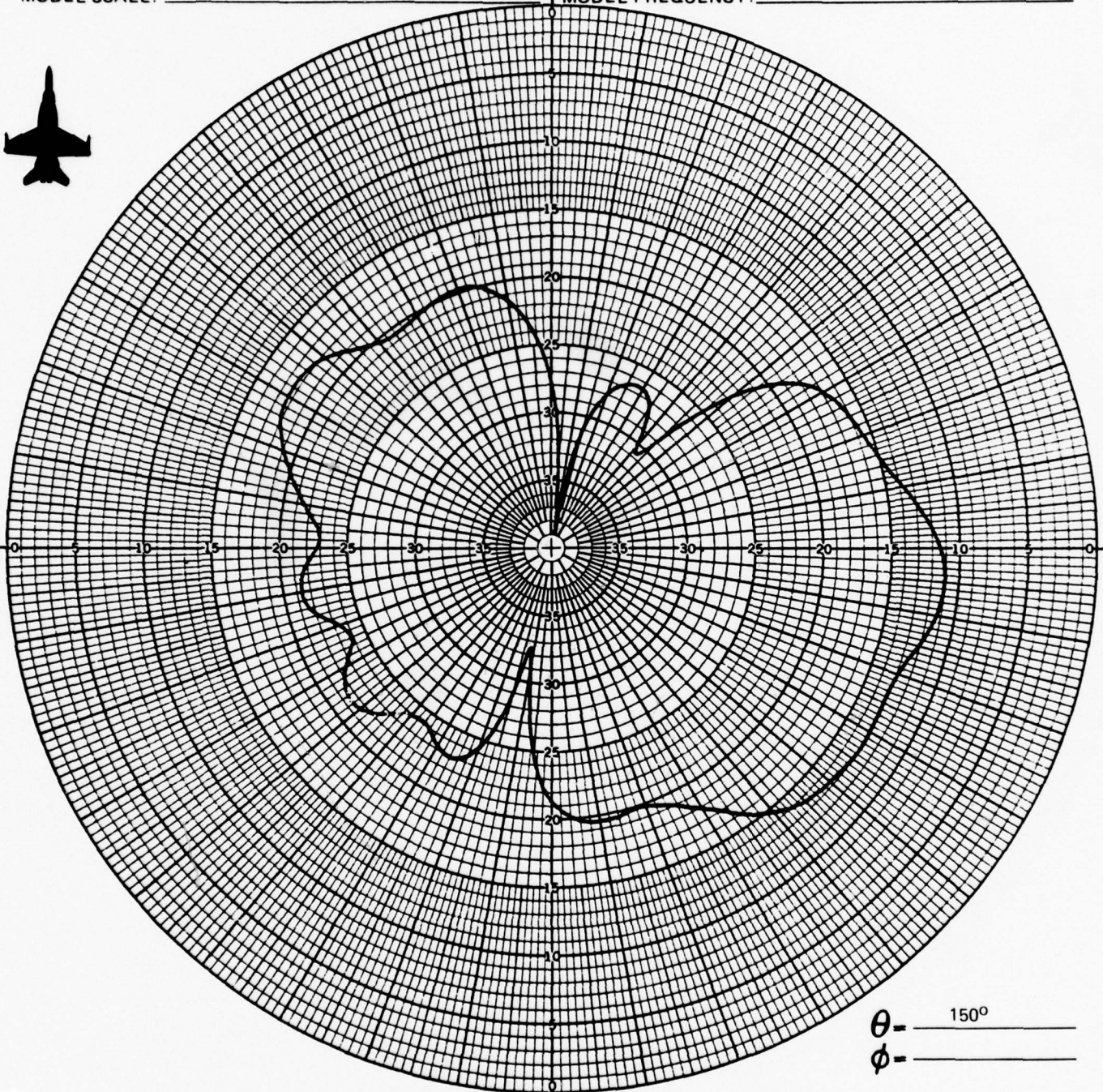
CONFIGURATION: _____ 30
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: _____ 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 104 MHz
MODEL FREQUENCY: _____ 416 MHz



θ - _____ 150°
 ϕ - _____

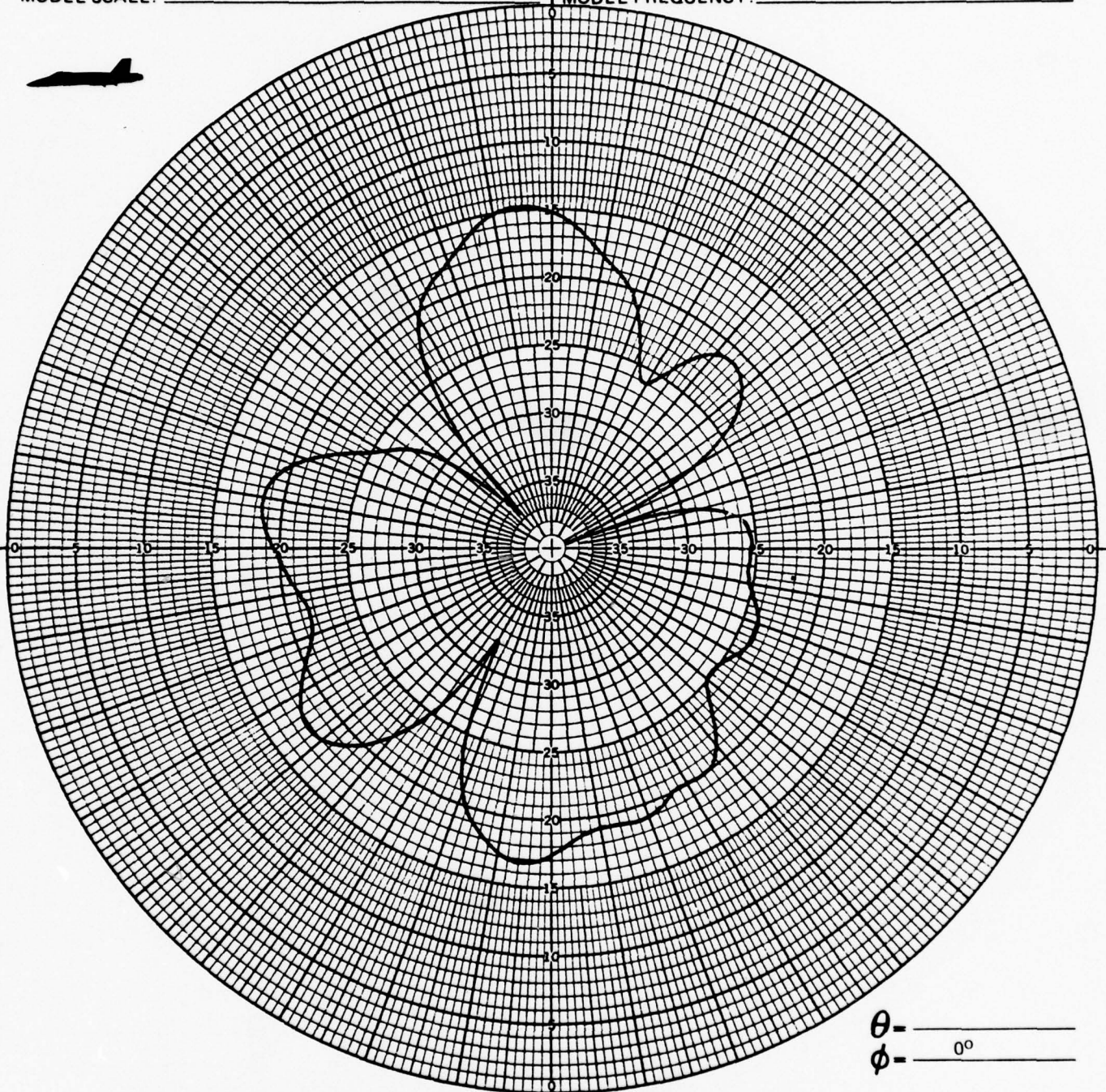
CONFIGURATION: _____ 30
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: _____ 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 104 MHz
MODEL FREQUENCY: _____ 416 MHz



θ - _____
 ϕ - _____ 0°

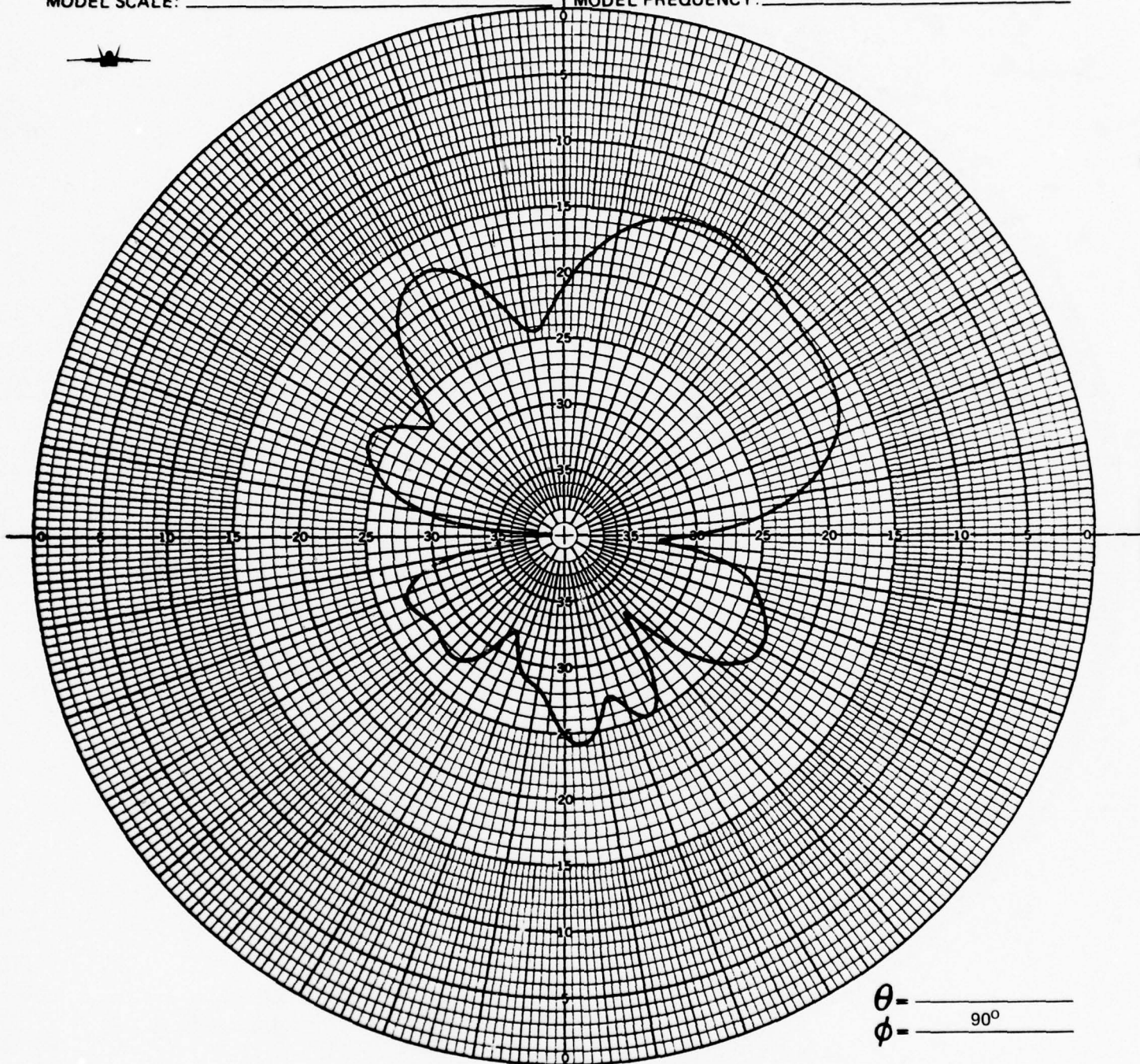
CONFIGURATION: _____ 30
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: _____ 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 104 MHz
MODEL FREQUENCY: _____ 416 MHz



θ - _____
 ϕ - _____ 90°

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: E ϕ ☒ E θ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

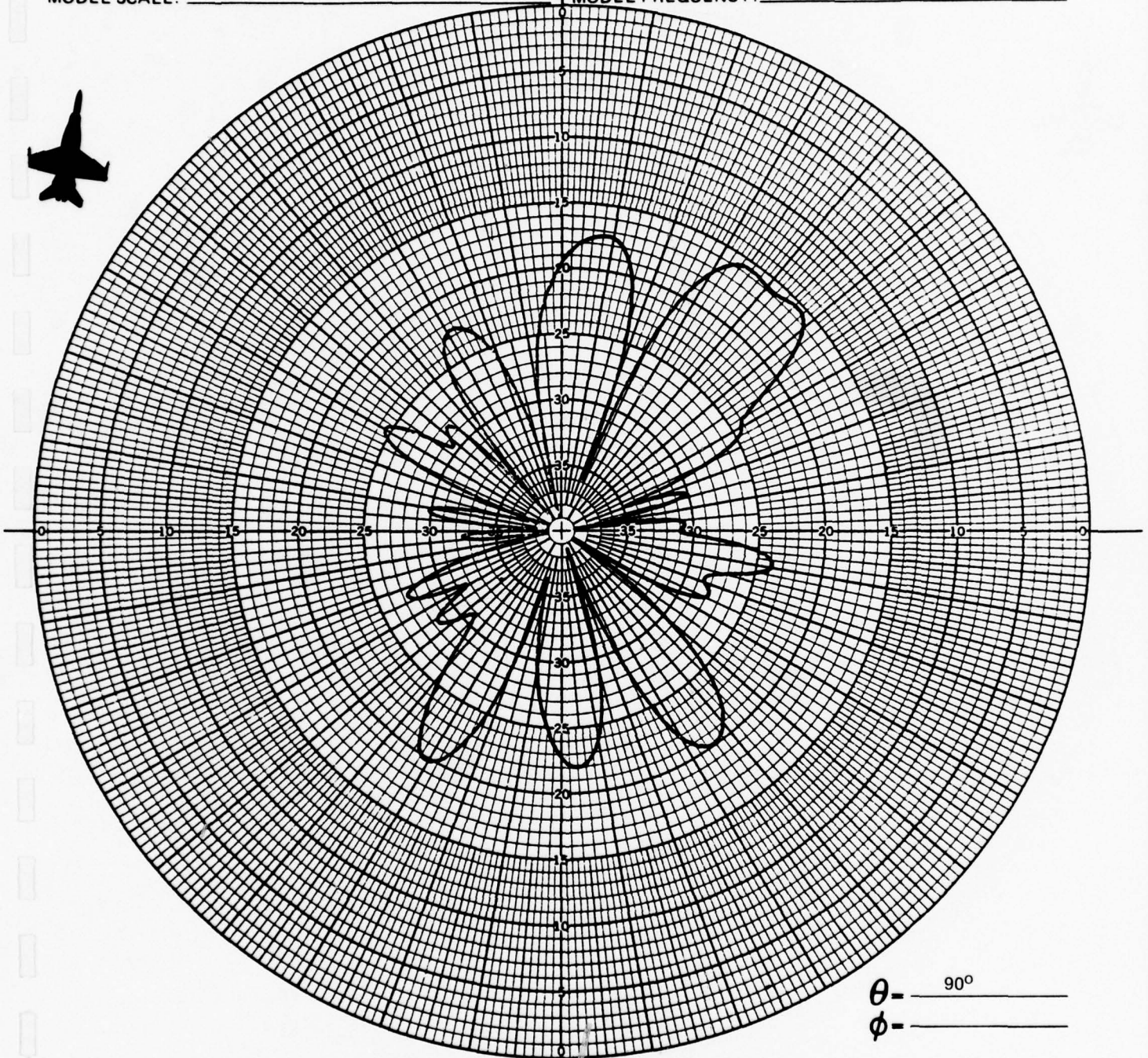
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 104 MHz
MODEL FREQUENCY: _____ 416 MHz



θ - _____ 90°
 ϕ - _____

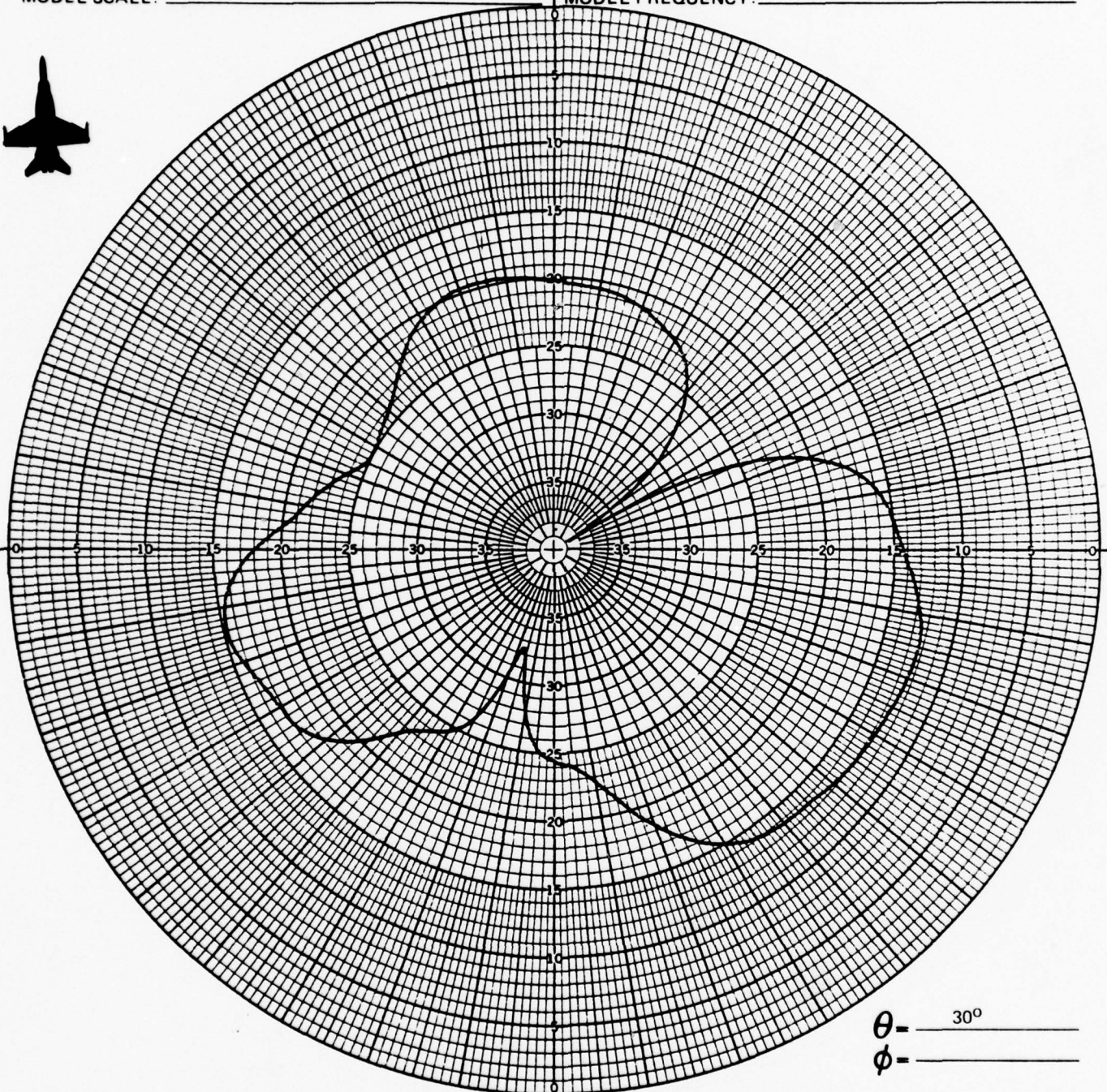
CONFIGURATION: _____ 30
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: _____ 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 104 MHz
MODEL FREQUENCY: _____ 416 MHz



θ - _____ 30°
 ϕ - _____

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

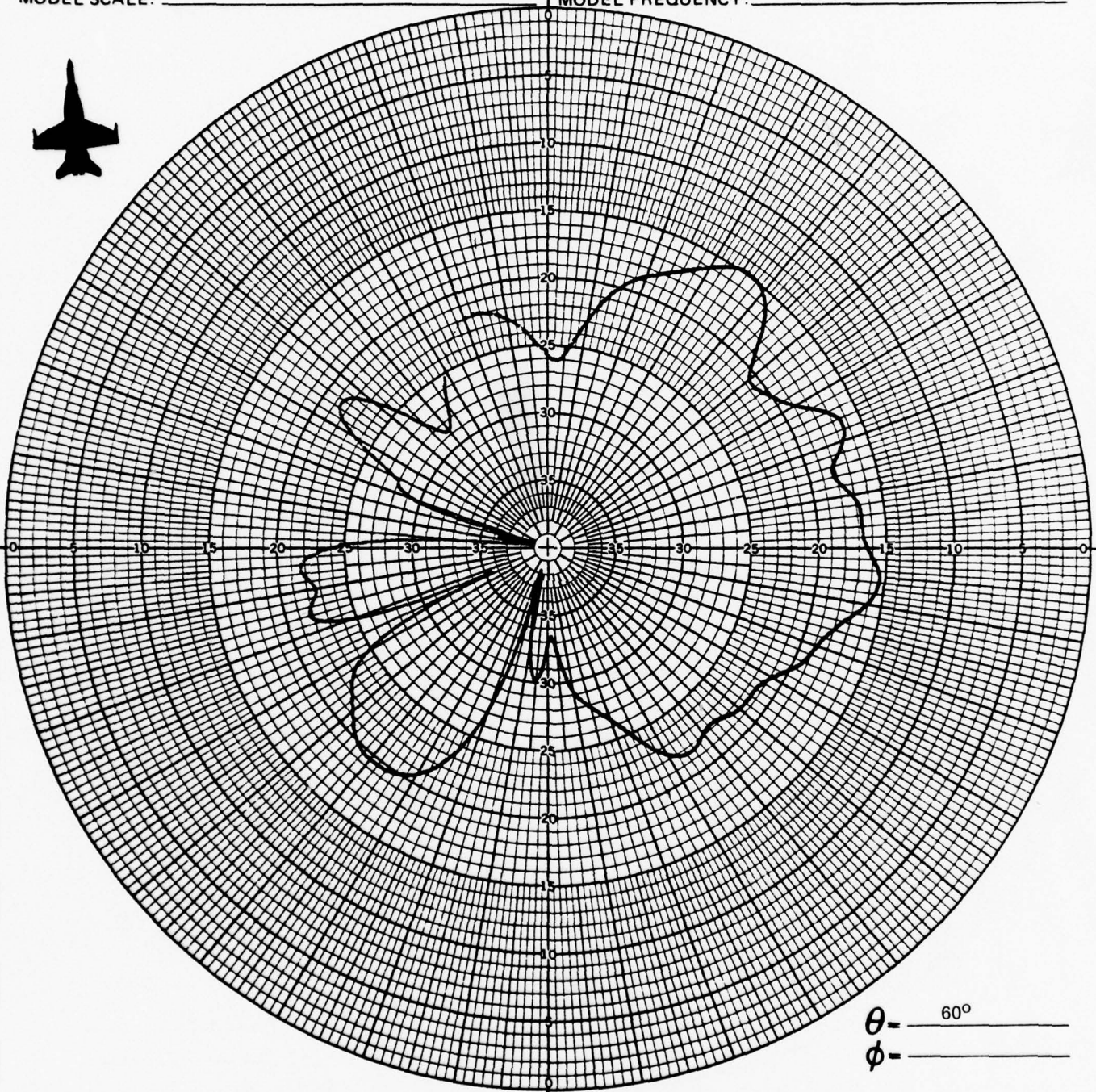
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM _____ DATE: _____ 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 104 MHz
MODEL FREQUENCY: _____ 416 MHz



θ - _____ 60°
 ϕ - _____

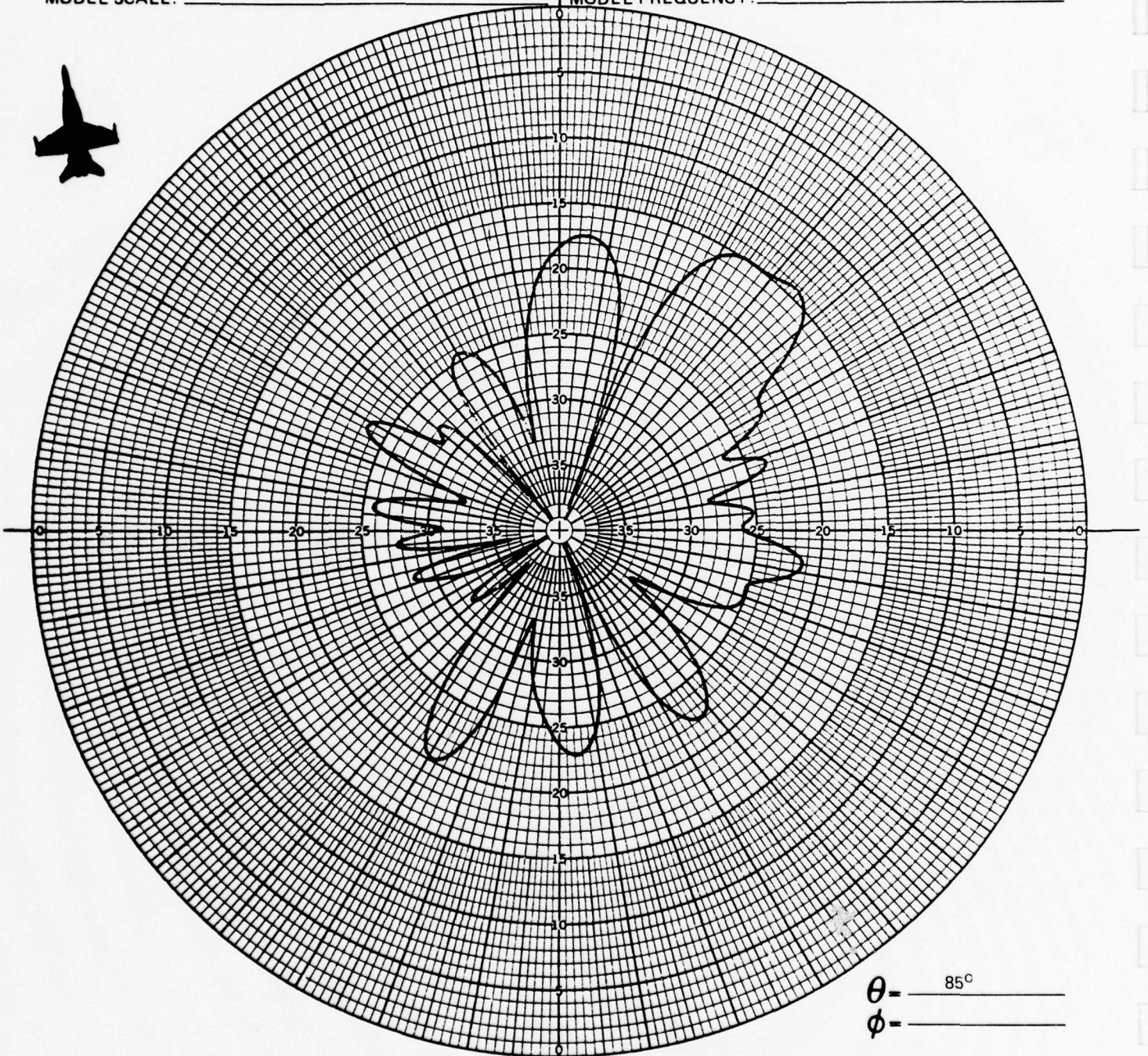
CONFIGURATION: _____ 30
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: E ϕ ☒ E θ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: _____ 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 104 MHz
MODEL FREQUENCY: _____ 416 MHz



θ - _____ 85°
 ϕ - _____

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

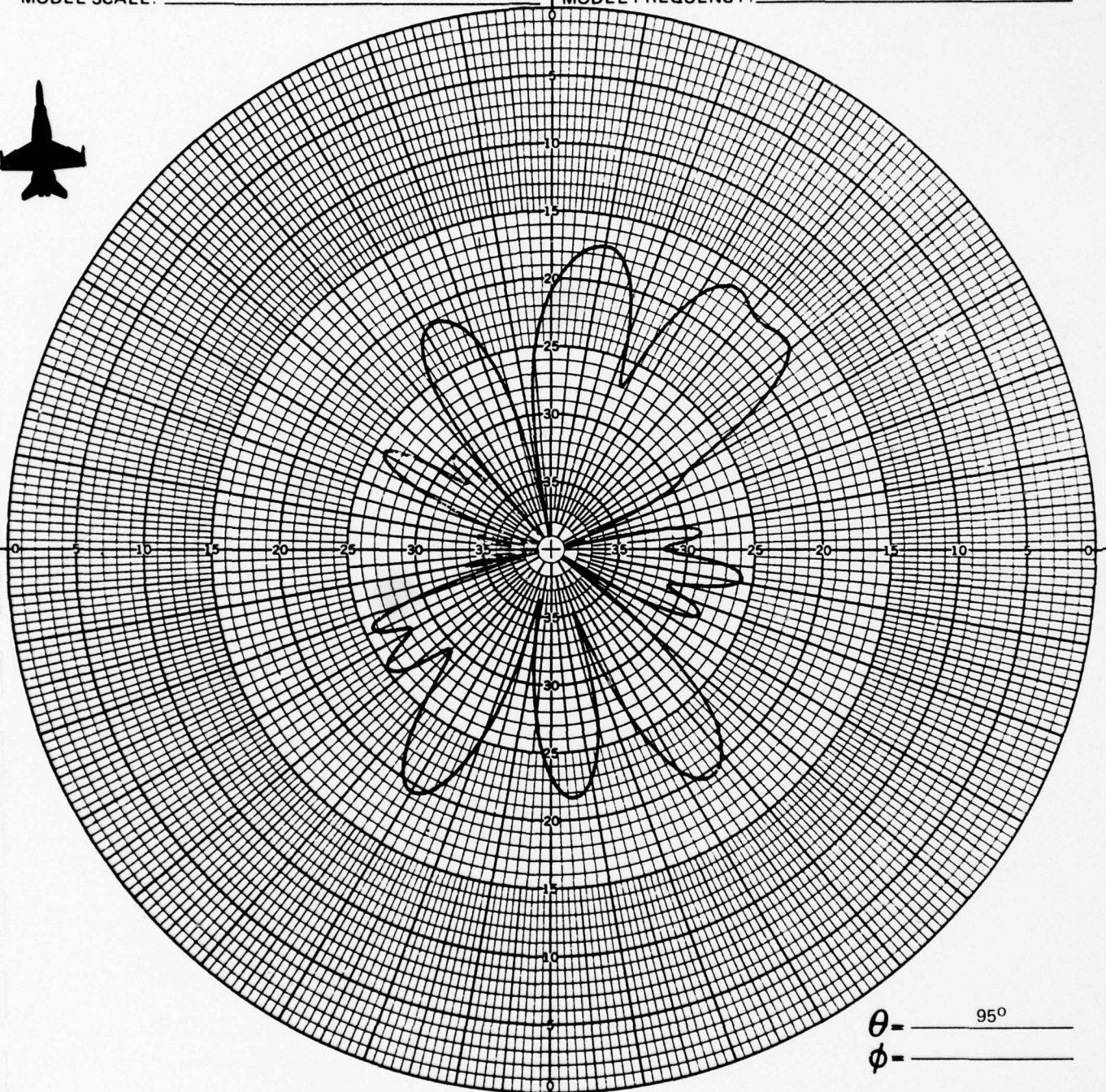
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 104 MHz
MODEL FREQUENCY: _____ 416 MHz



θ = _____ 95°
 ϕ = _____

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

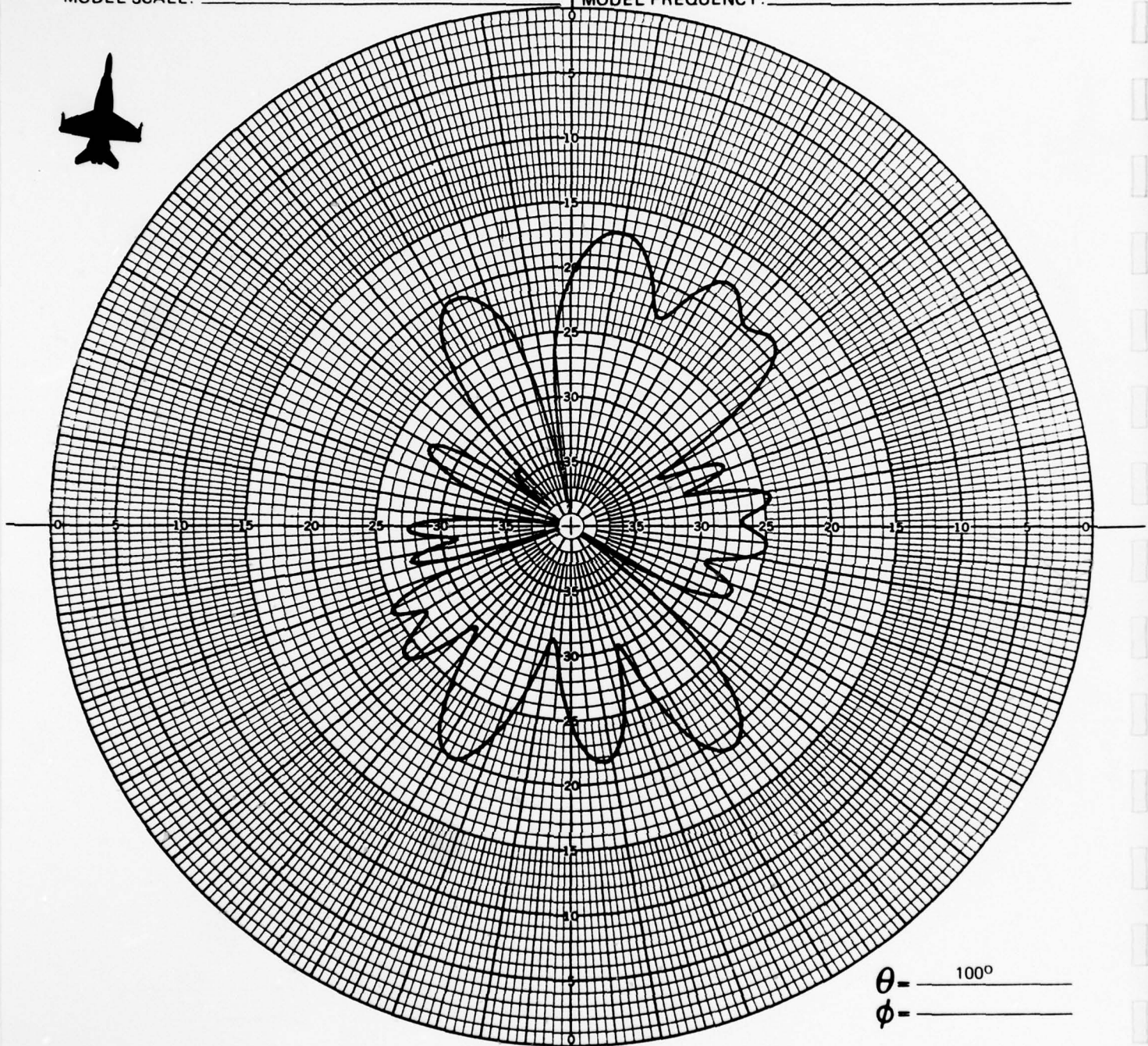
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 104 MHz
MODEL FREQUENCY: _____ 416 MHz



θ - _____ 100°
 ϕ - _____

CONFIGURATION: _____ 30
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: _____ 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE

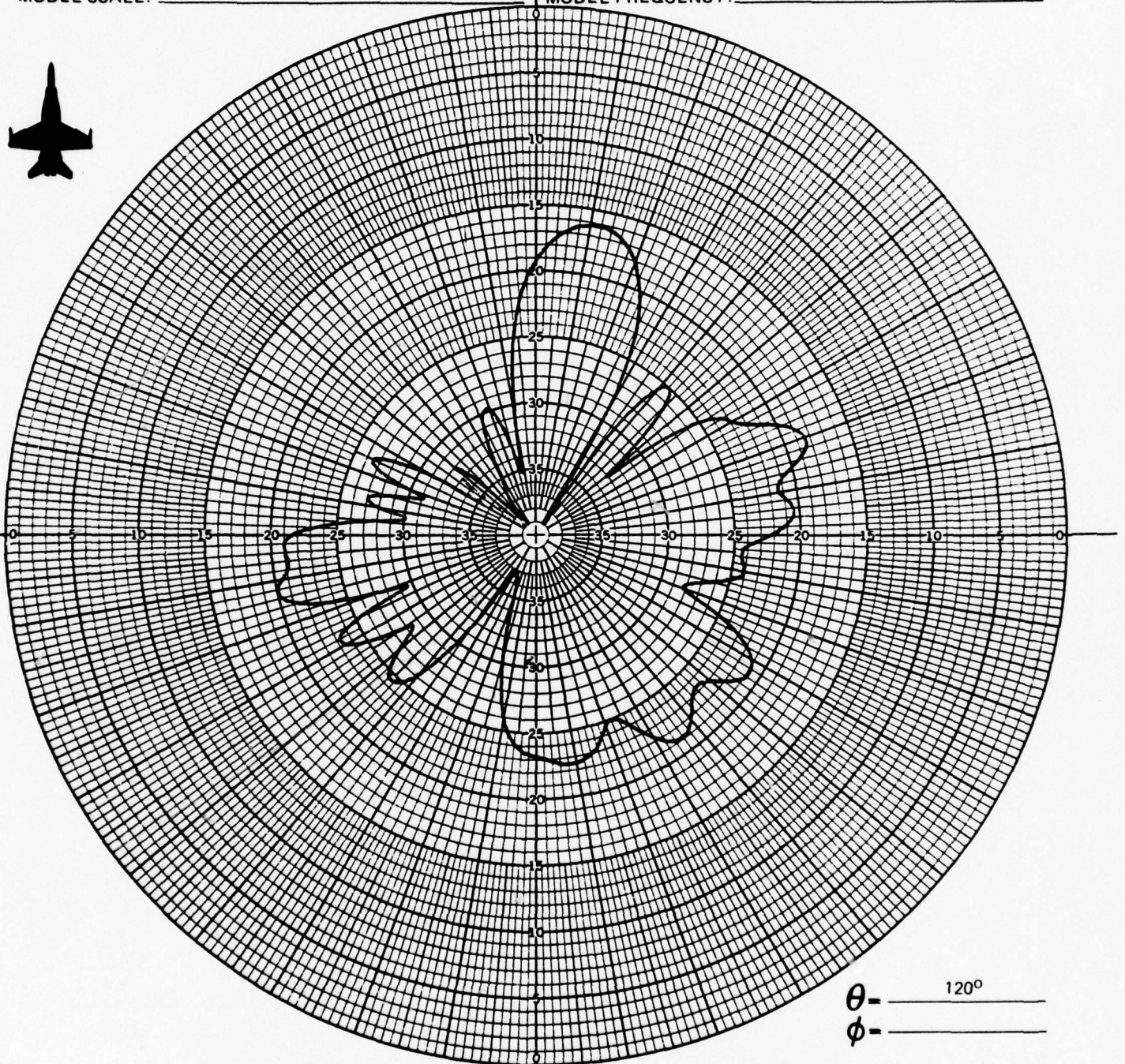
ANTENNA LOCATION: _____ FINCAP

MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)

FULL SCALE FREQUENCY: _____ 104 MHz

MODEL FREQUENCY: _____ 416 MHz



θ = _____ 120°
 ϕ = _____

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

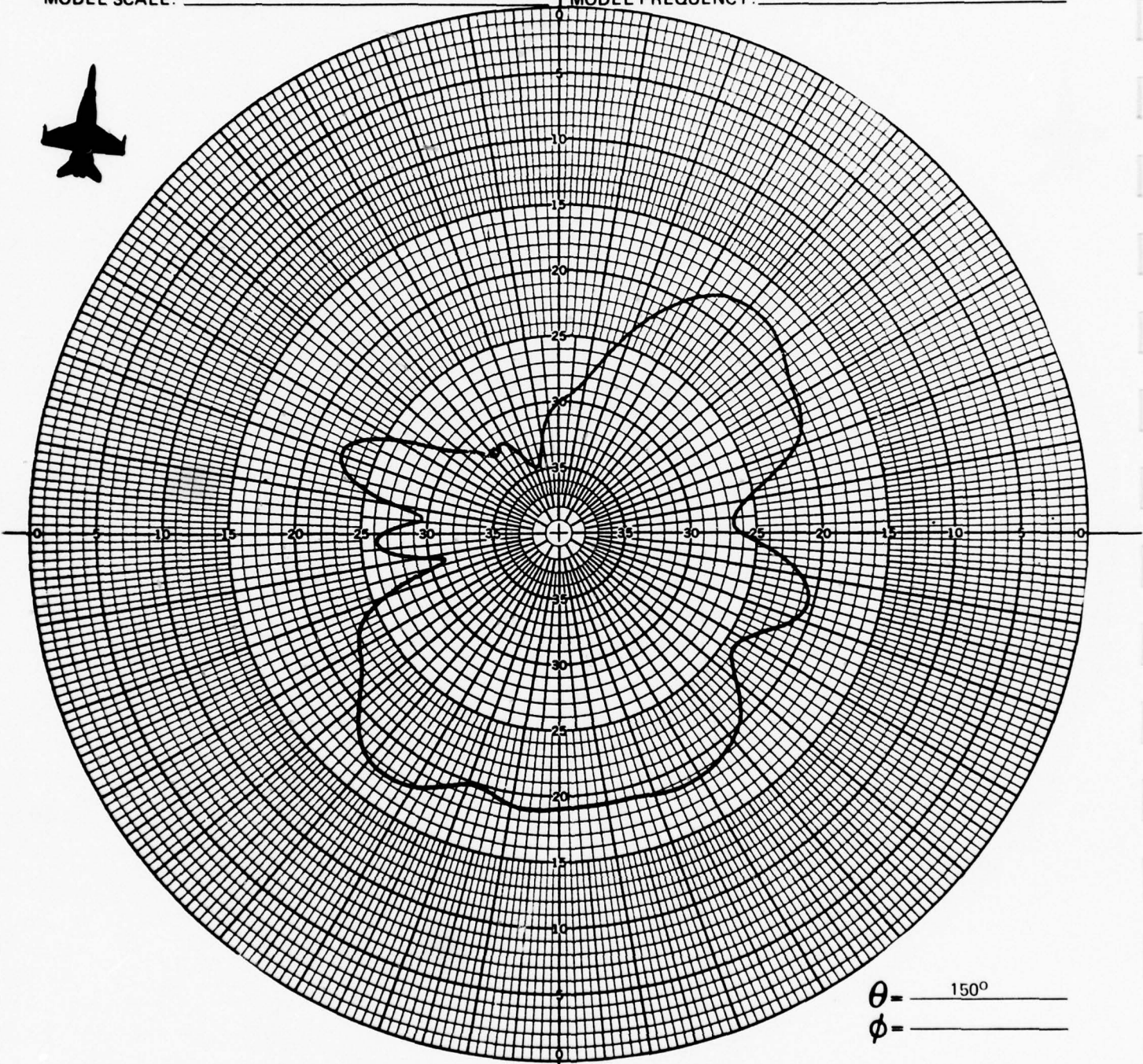
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM _____ DATE: _____ 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 104 MHz
MODEL FREQUENCY: _____ 416 MHz



θ = _____ 150°
 ϕ = _____

CONFIGURATION: _____ 30
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM _____ DATE: _____

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE

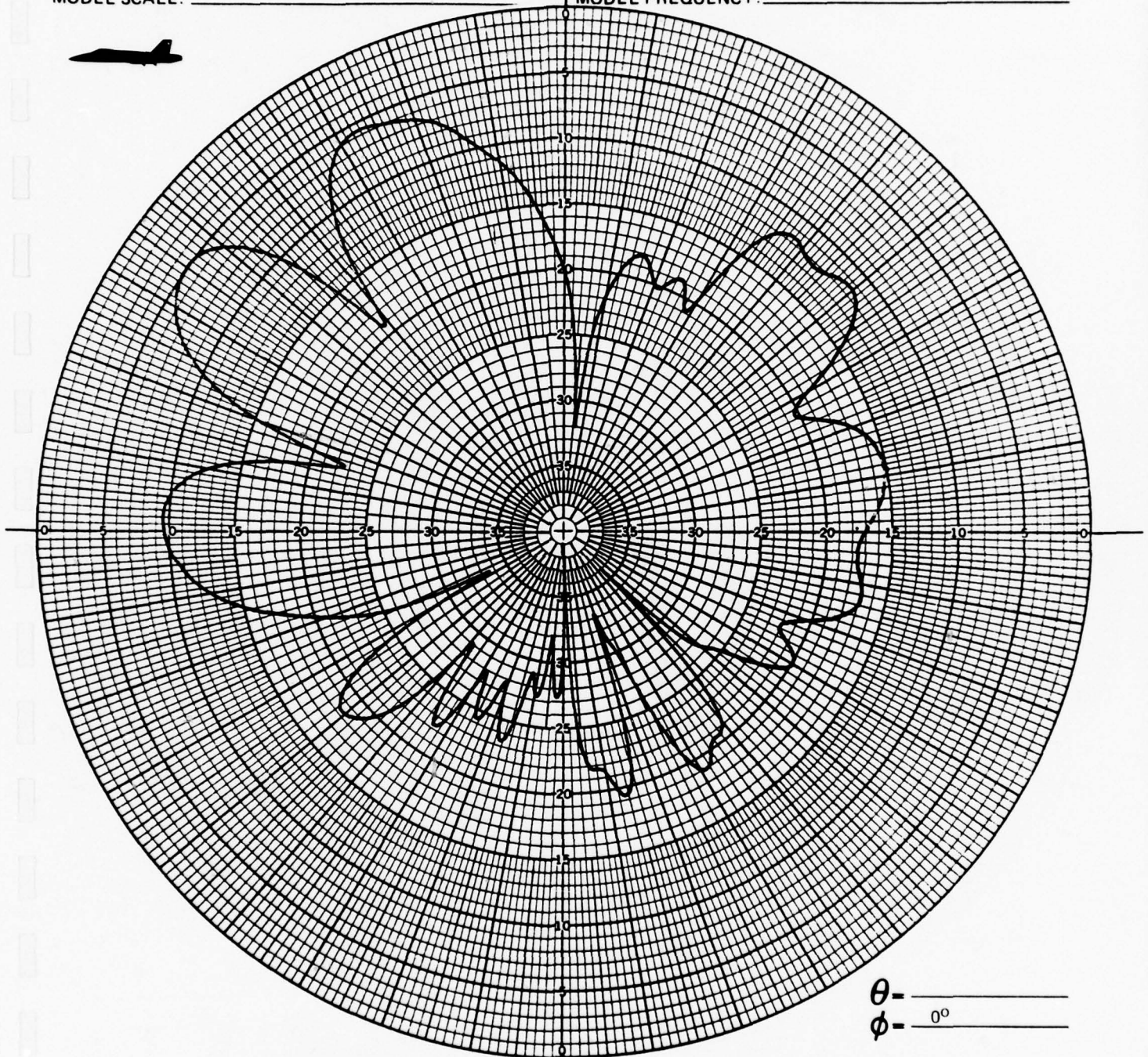
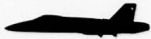
ANTENNA LOCATION: _____ FINCAP

MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)

FULL SCALE FREQUENCY: _____ 145 MHz

MODEL FREQUENCY: _____ 580 MHz



θ - _____
 ϕ - _____ 0°

CONFIGURATION: _____ 30

REMARKS _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

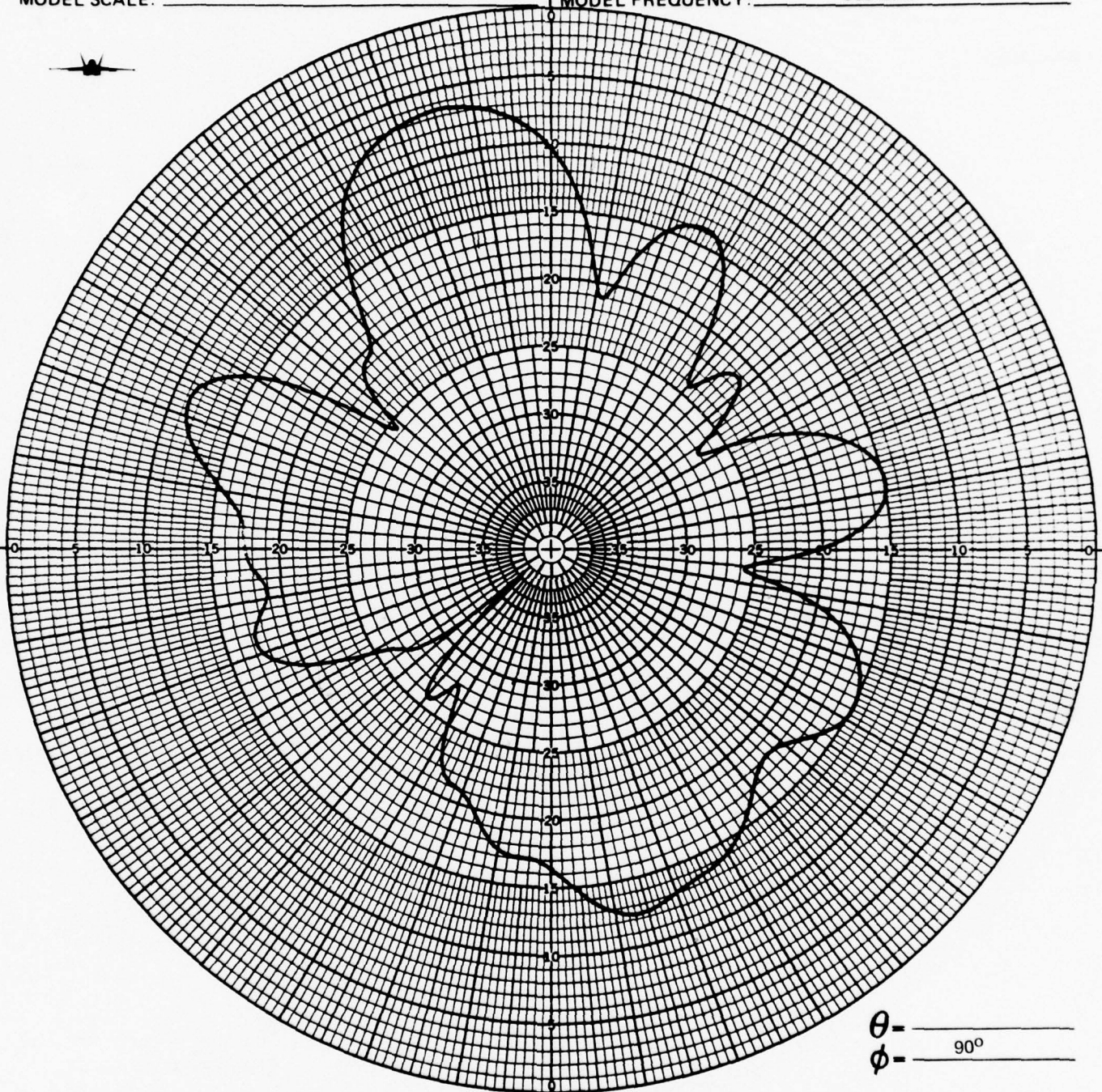
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 145 MHz
MODEL FREQUENCY: _____ 580 MHz



θ - _____
 ϕ - _____ 90°

CONFIGURATION: _____ 30
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: _____ 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE

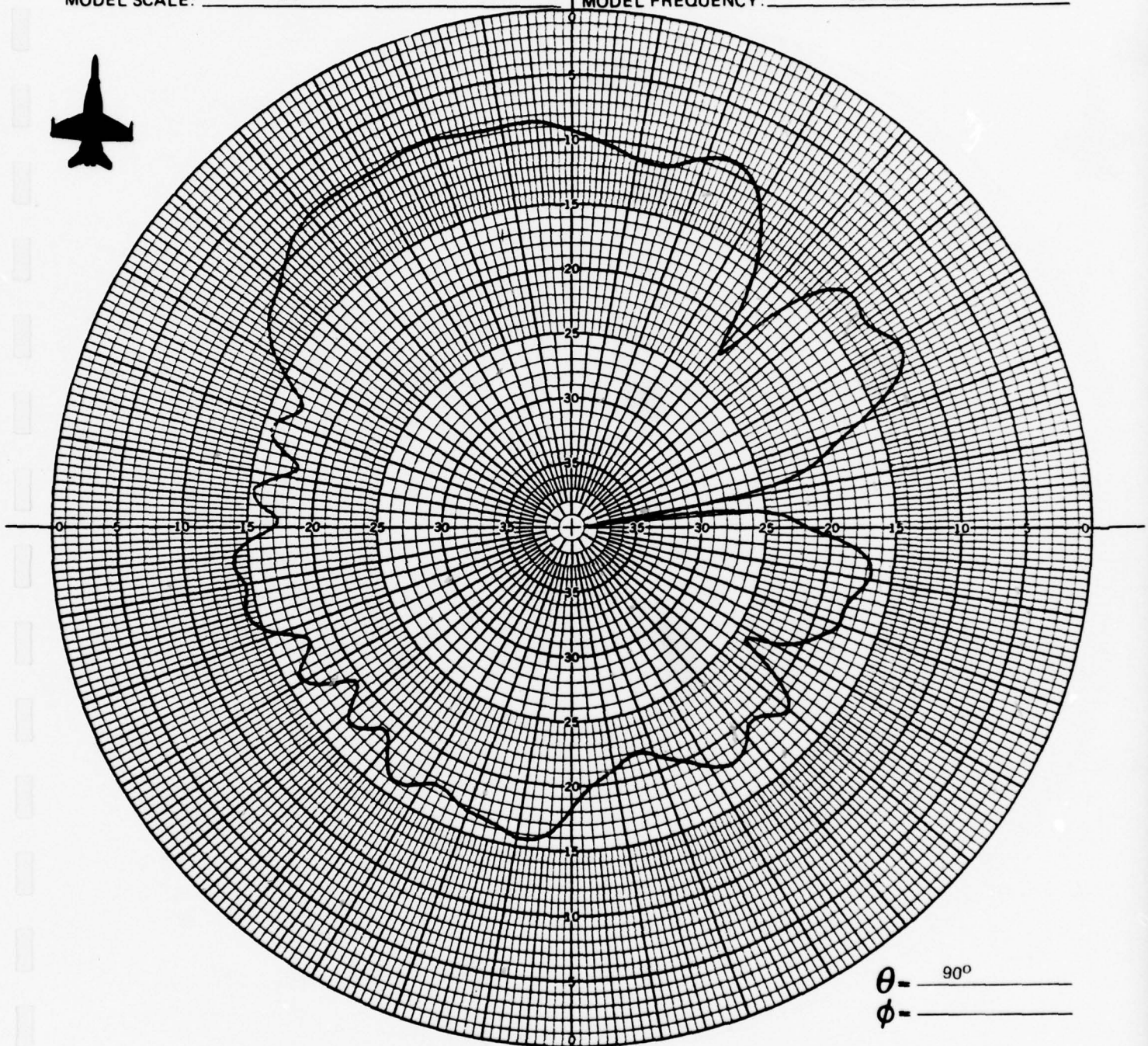
ANTENNA LOCATION: _____ FINCAP

MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)

FULL SCALE FREQUENCY: _____ 145 MHz

MODEL FREQUENCY: _____ 580 MHz



θ - 90°
 ϕ - _____

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

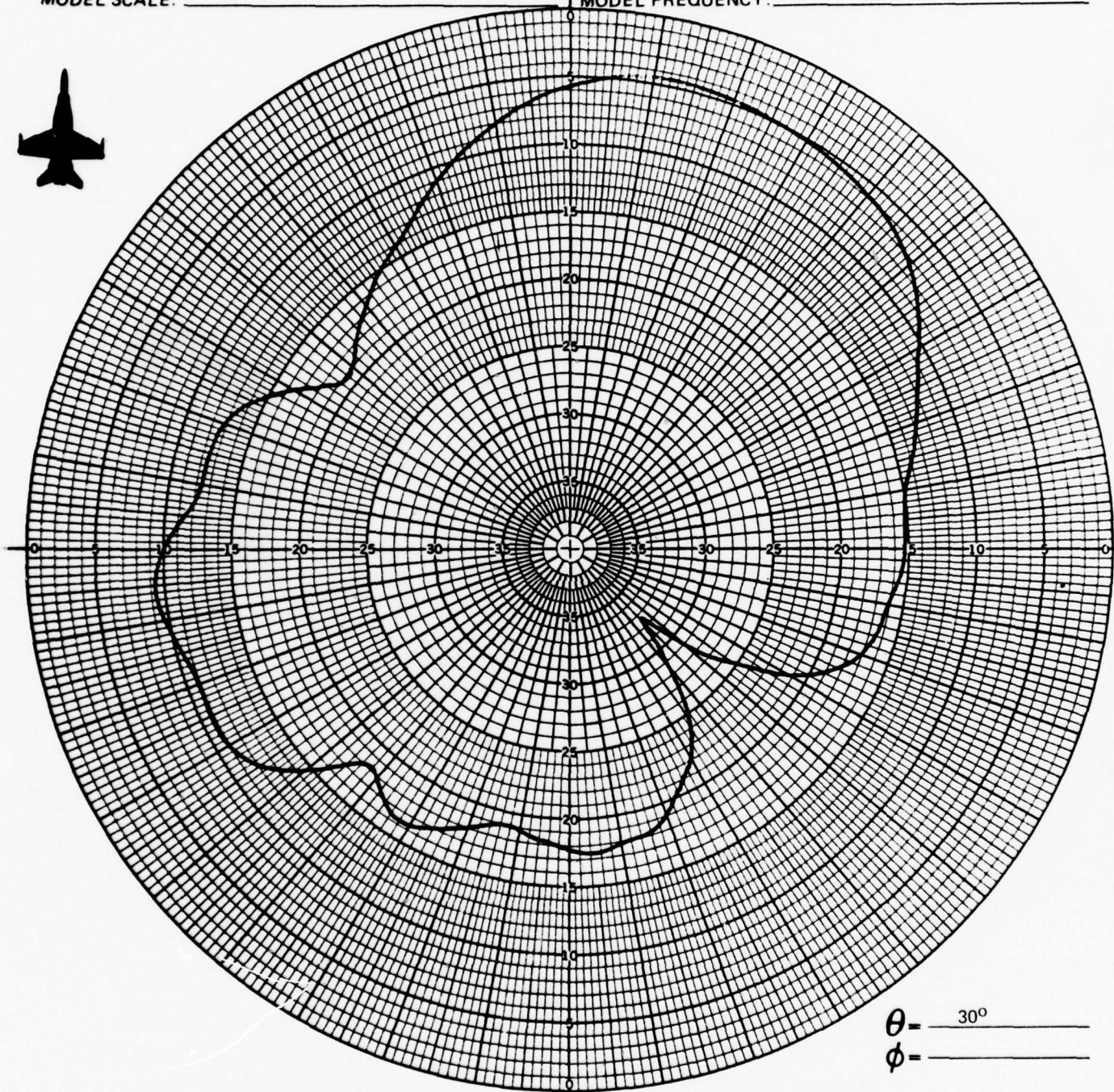
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/4

TEST IDENT.: 703-174 (F-18)
FULL SCALE FREQUENCY: 145 MHz
MODEL FREQUENCY: 580 MHz



$\theta = 30^\circ$
 $\phi =$

CONFIGURATION: 30
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: 285 FT
OBSERVER: PN, BM DATE: 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE

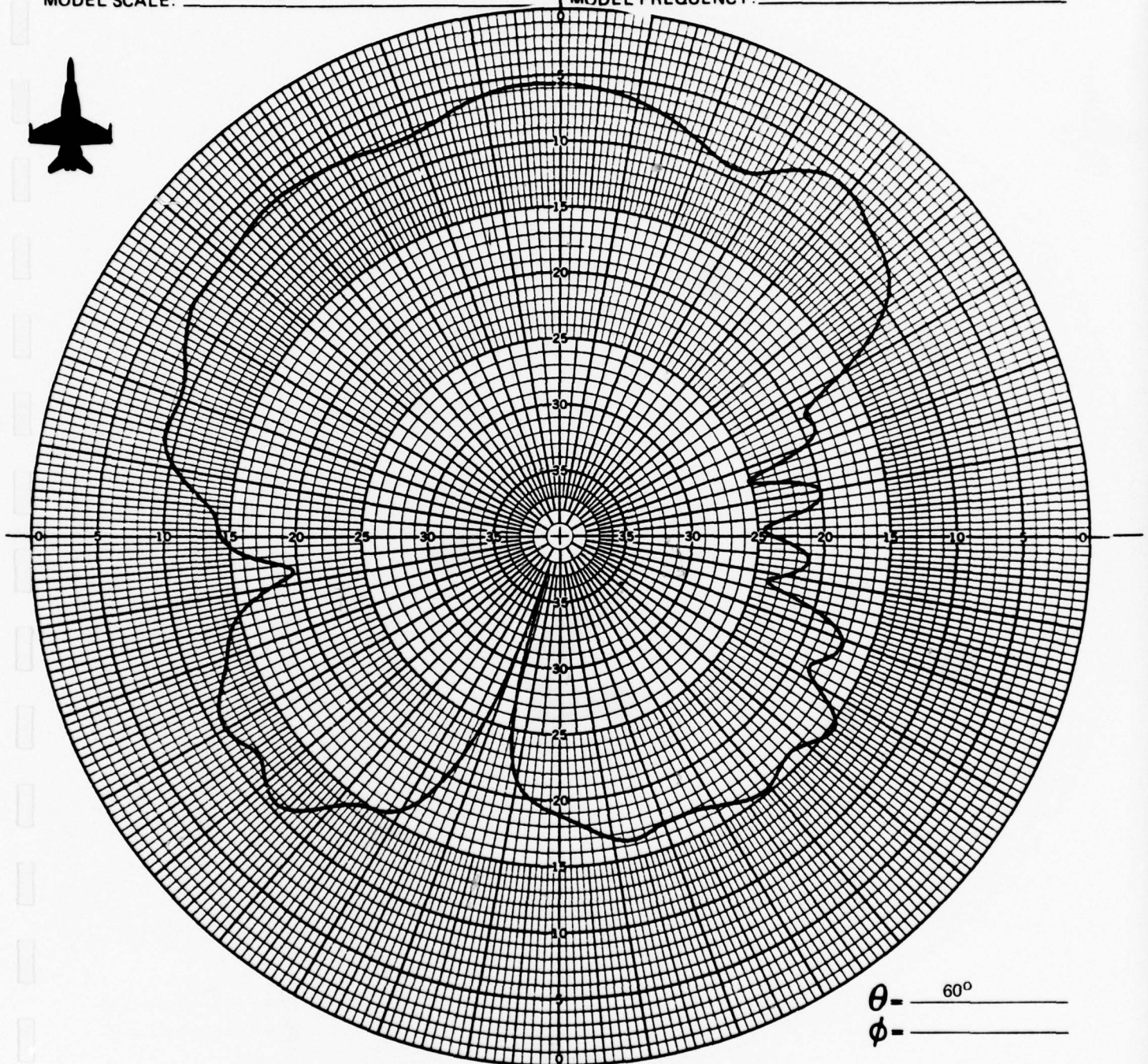
ANTENNA LOCATION: _____ FINCAP

MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)

FULL SCALE FREQUENCY: _____ 145 MHz

MODEL FREQUENCY: _____ 580 MHz



θ - _____ 60°
 ϕ - _____

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE

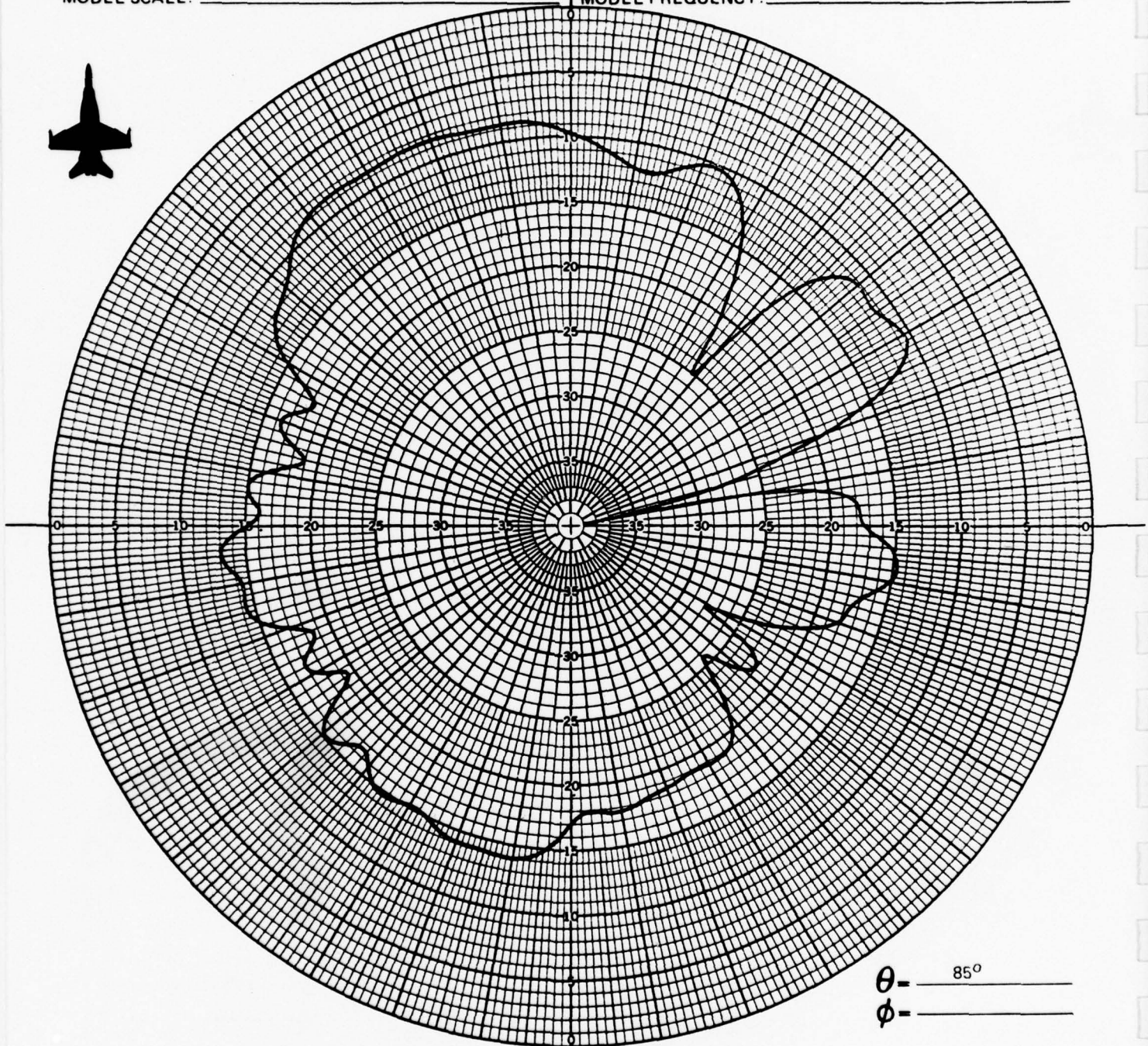
ANTENNA LOCATION: _____ FINCAP

MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)

FULL SCALE FREQUENCY: _____ 145 MHz

MODEL FREQUENCY: _____ 580 MHz



θ - 85°
 ϕ - _____

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

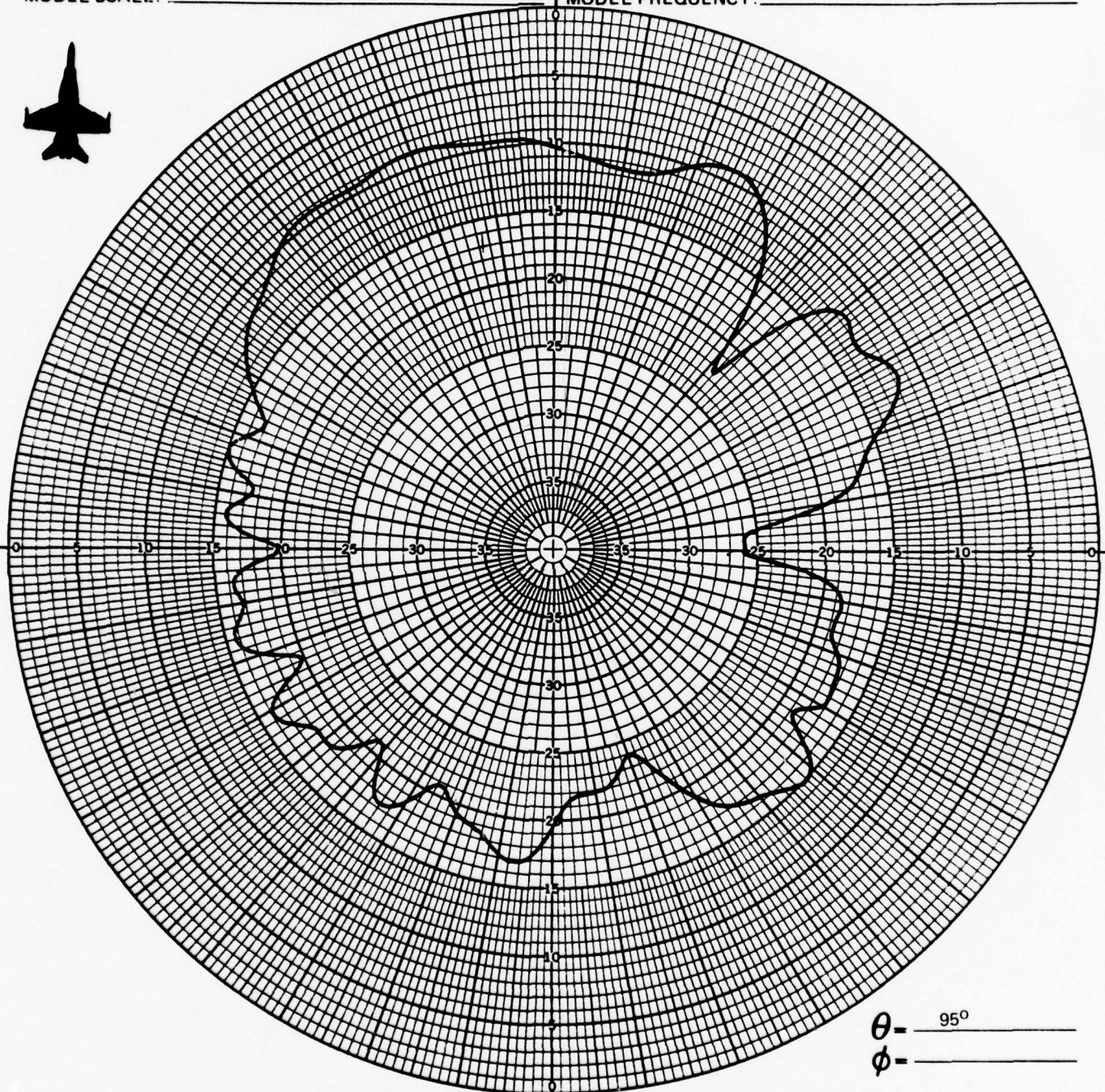
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/4

TEST IDENT.: 703-174 (F-18)
FULL SCALE FREQUENCY: 145 MHz
MODEL FREQUENCY: 580 MHz



θ = 95°
 ϕ = _____

CONFIGURATION: 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

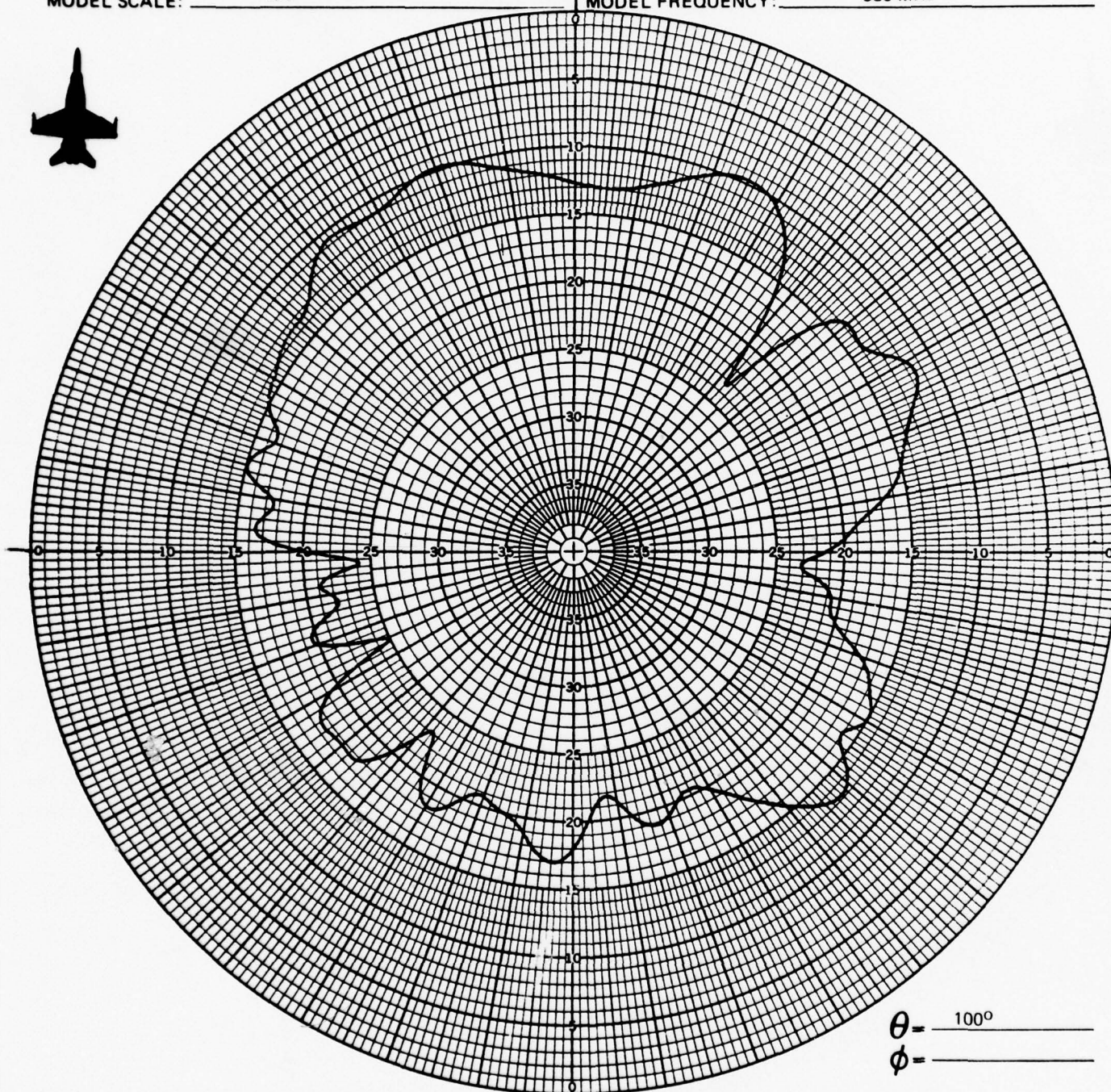
TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 145 MHz
MODEL FREQUENCY: _____ 580 MHz



θ = 100°
 ϕ = _____

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: E ϕ ☐ E θ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE

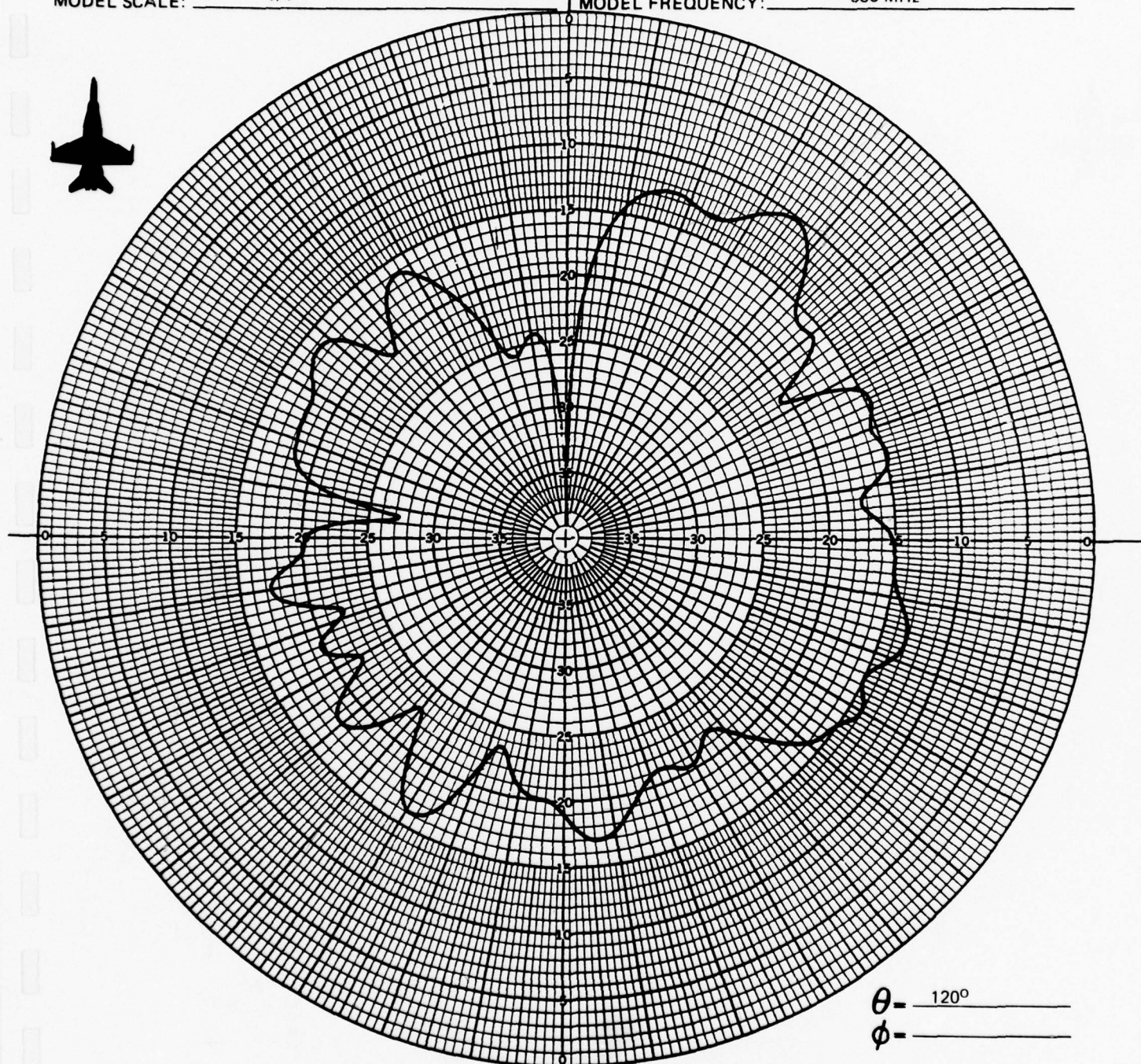
ANTENNA LOCATION: _____ FINCAP

MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)

FULL SCALE FREQUENCY: _____ 145 MHz

MODEL FREQUENCY: _____ 580 MHz



θ - 120°
 ϕ - _____

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

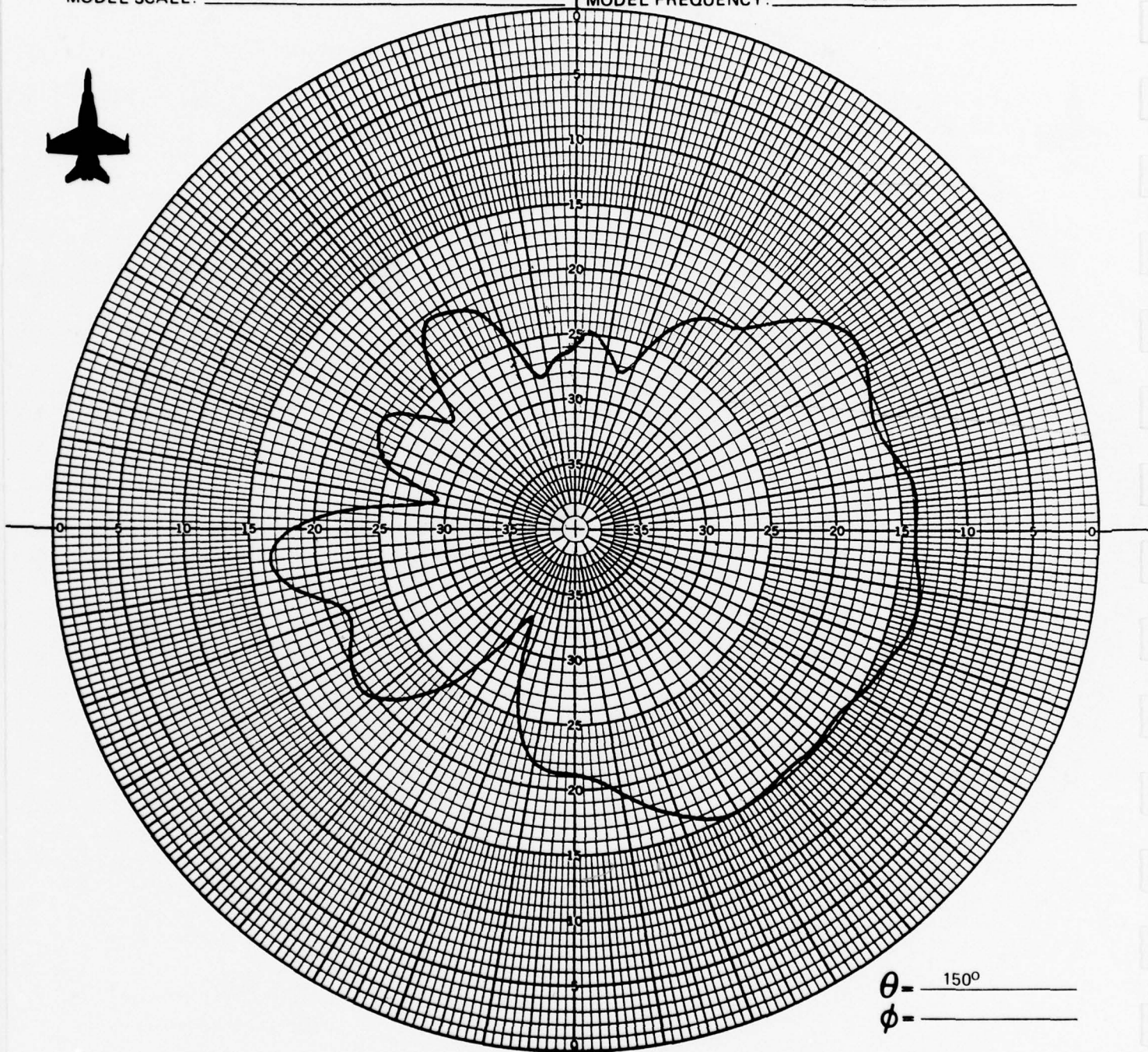
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 145 MHz
MODEL FREQUENCY: _____ 580 MHz



θ - 150°
 ϕ - _____

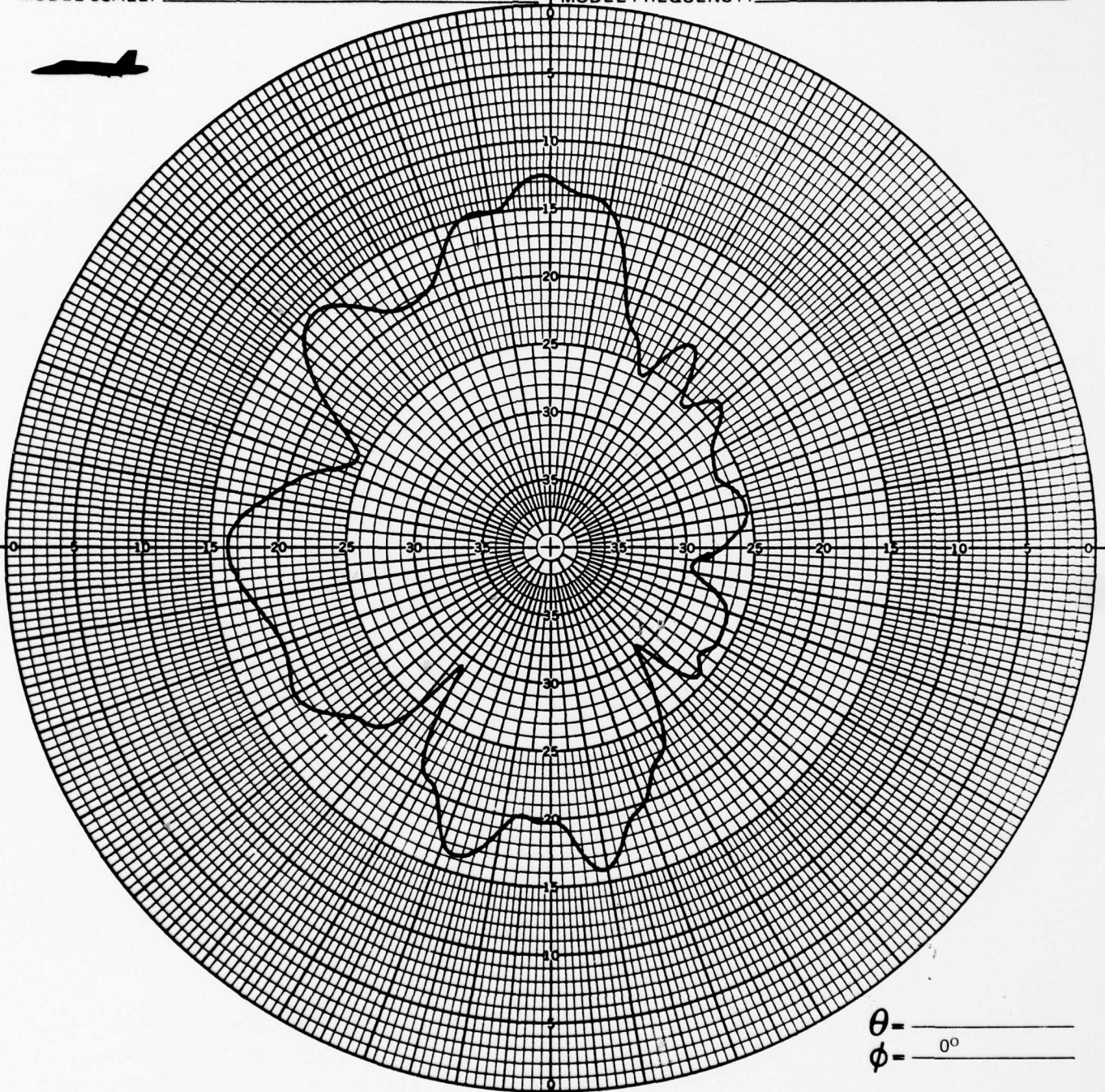
CONFIGURATION: _____ 30
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: ☒ E ϕ ☐ E θ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/4

TEST IDENT.: 703-174 (F-18)
FULL SCALE FREQUENCY: 145 MHz
MODEL FREQUENCY: 580 MHz



θ - _____
 ϕ - 0°

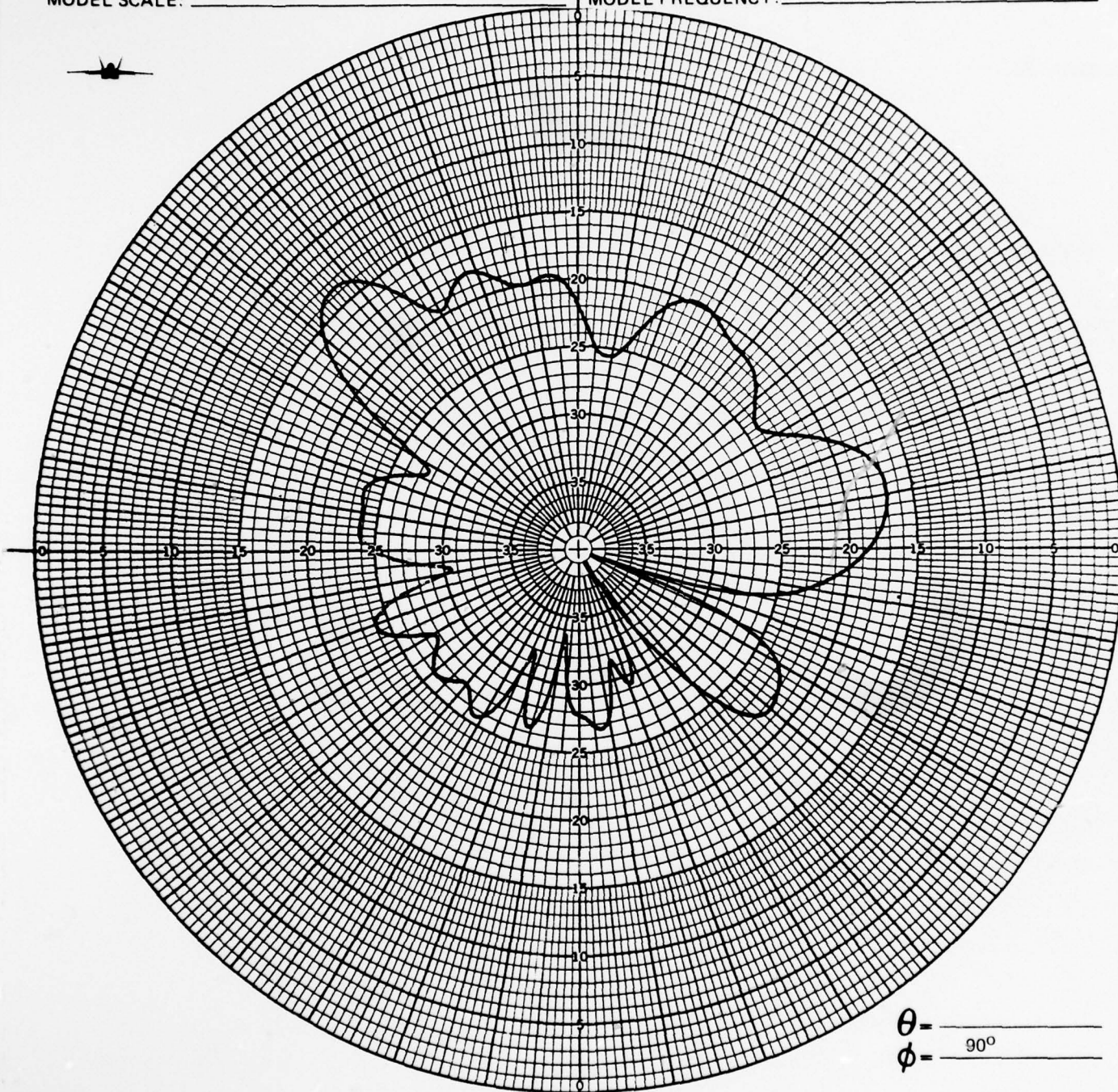
CONFIGURATION: 30
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: 285 FT
OBSERVER: PN, BM DATE: 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/4

TEST IDENT.: 703-174 (F-18)
FULL SCALE FREQUENCY: 145 MHz
MODEL FREQUENCY: 580 MHz



CONFIGURATION: 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

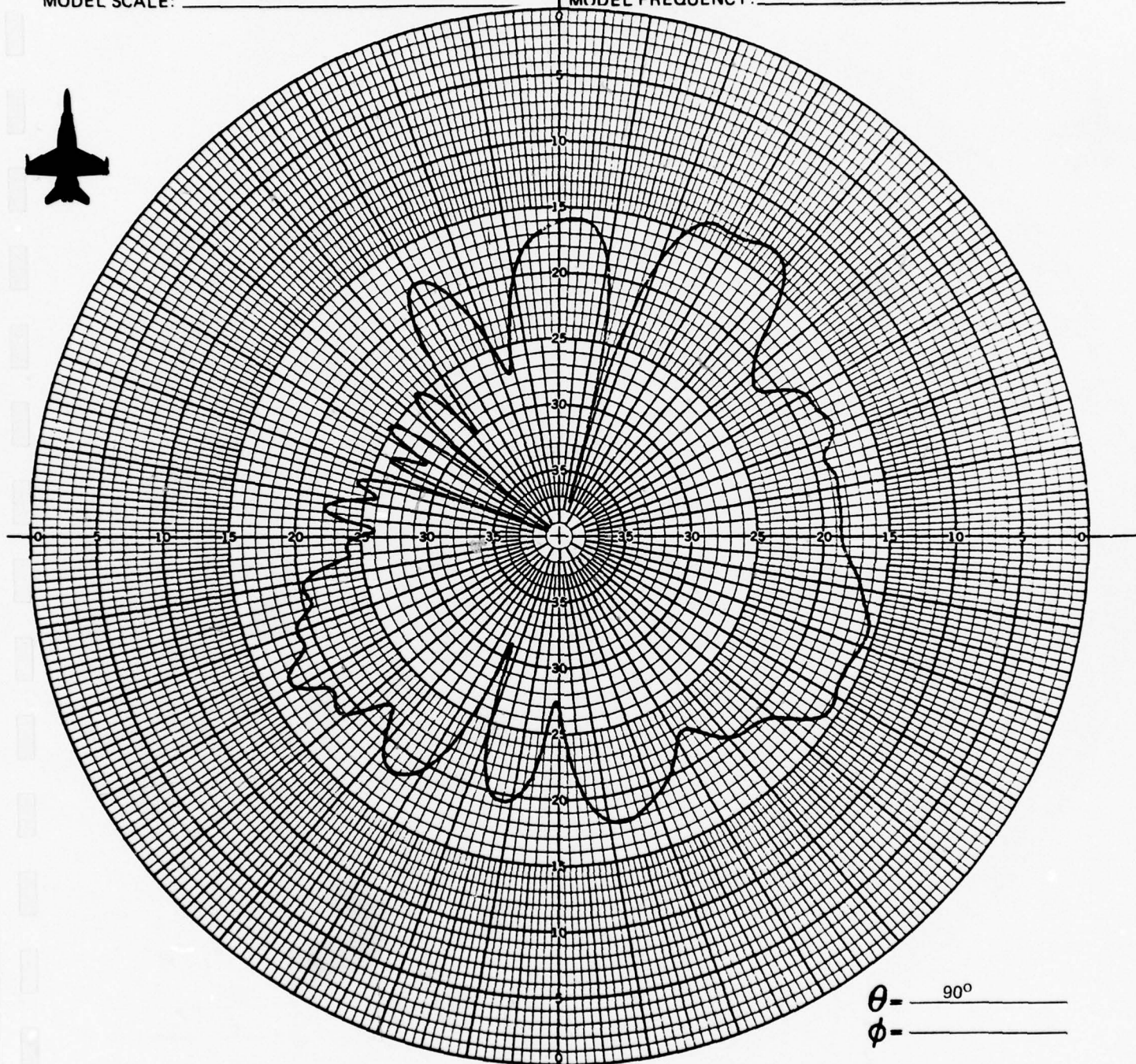
TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 145 MHz
MODEL FREQUENCY: _____ 580 MHz



θ - _____ 90°
 ϕ - _____

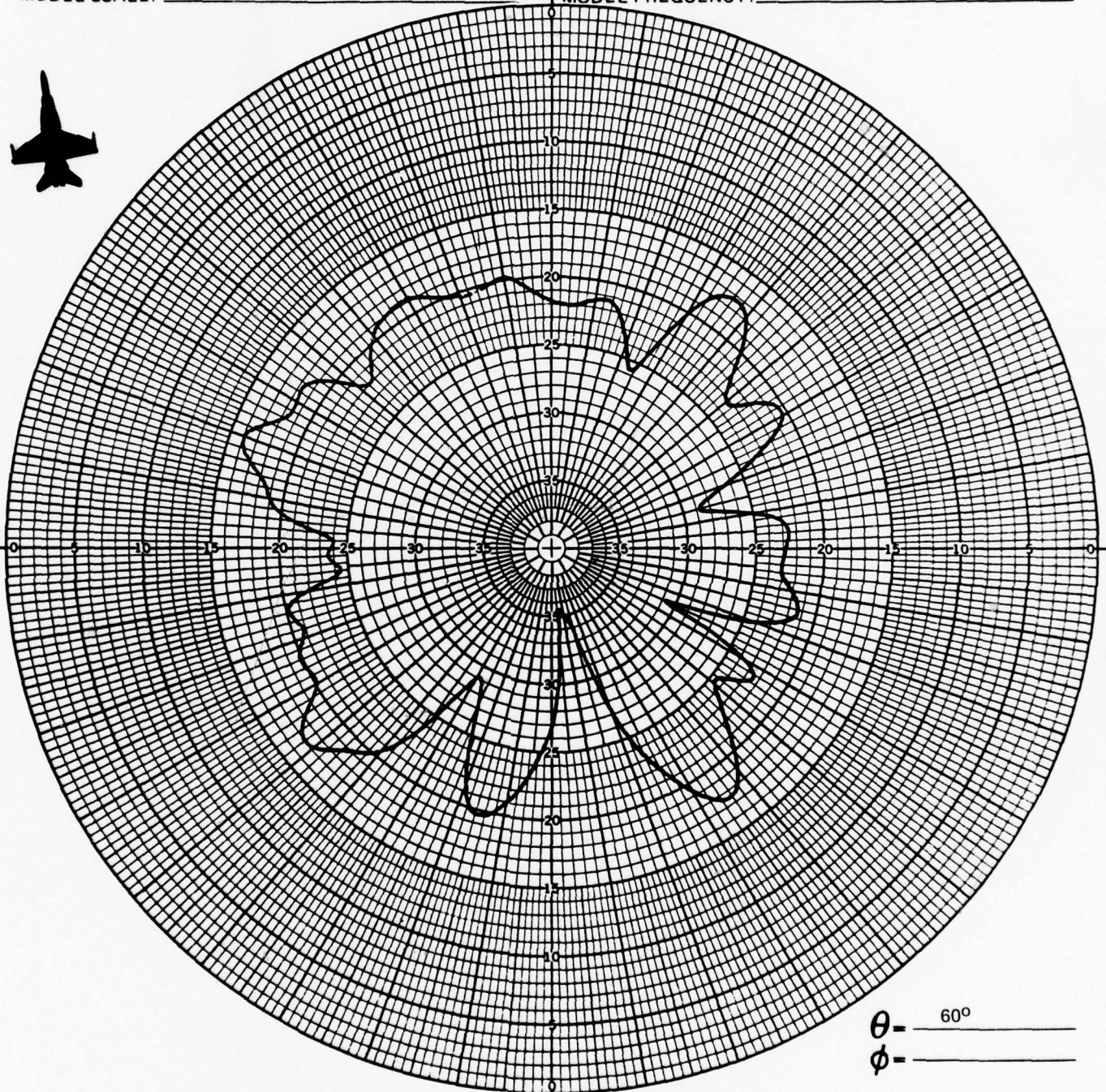
CONFIGURATION: _____ 30
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: E ☒ ϕ ☐ E θ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: _____ 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 145 MHz
MODEL FREQUENCY: _____ 580 MHz



θ = 60°
 ϕ = _____

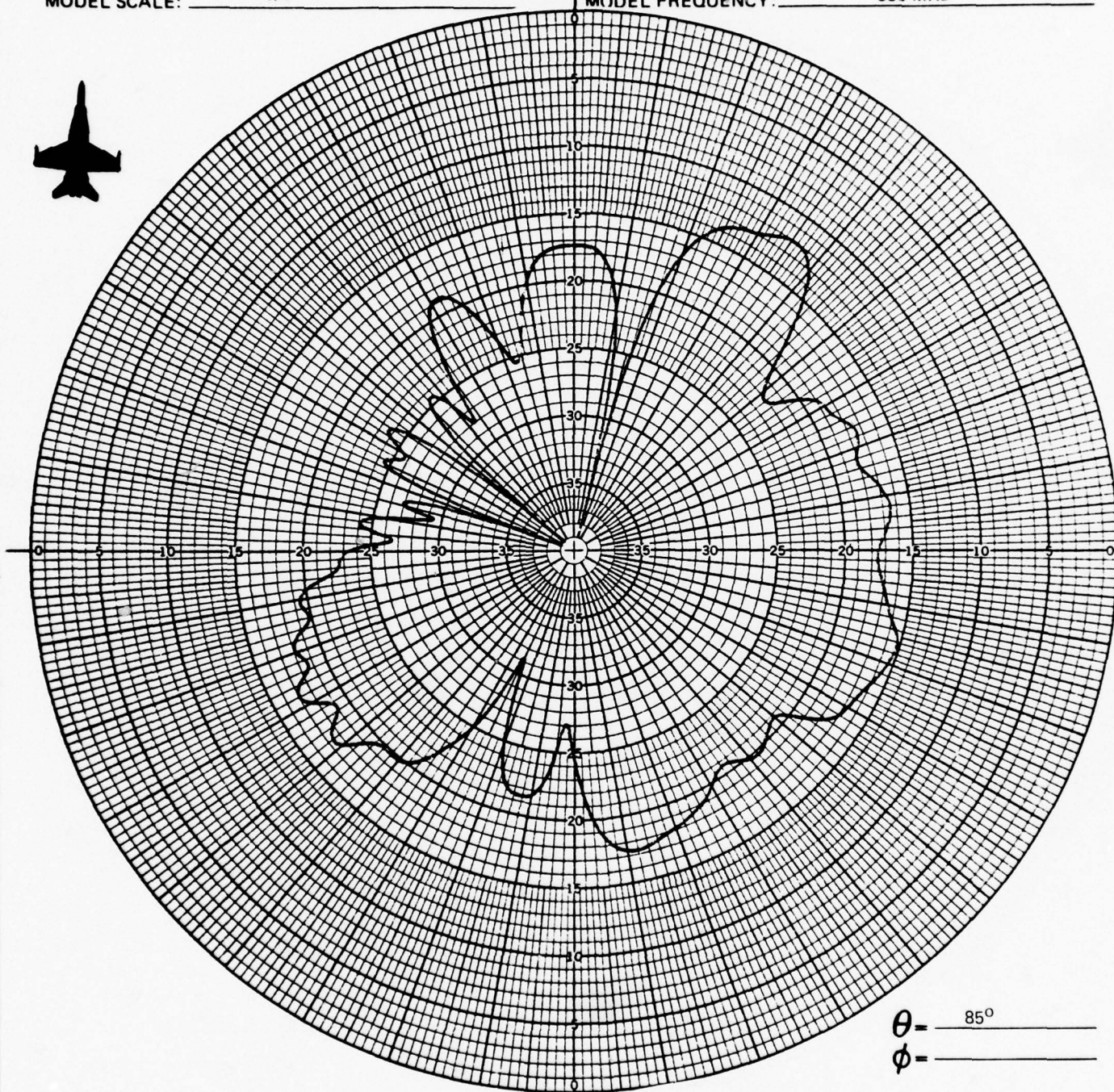
CONFIGURATION: _____ 30
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 145 MHz
MODEL FREQUENCY: _____ 580 MHz



θ = 85°
 ϕ = _____

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

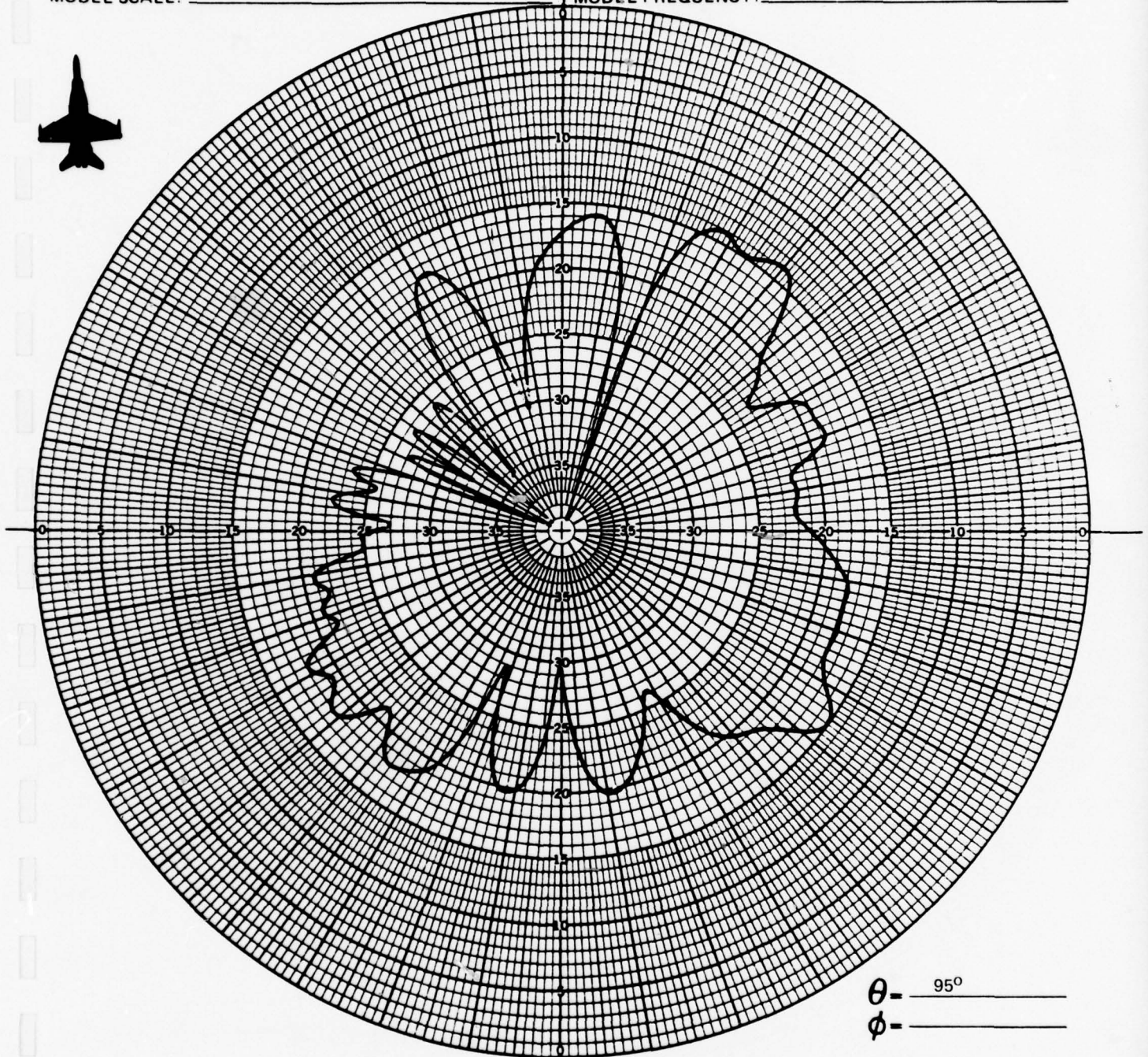
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 145 MHz
MODEL FREQUENCY: _____ 580 MHz



θ - 95°
 ϕ - _____

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

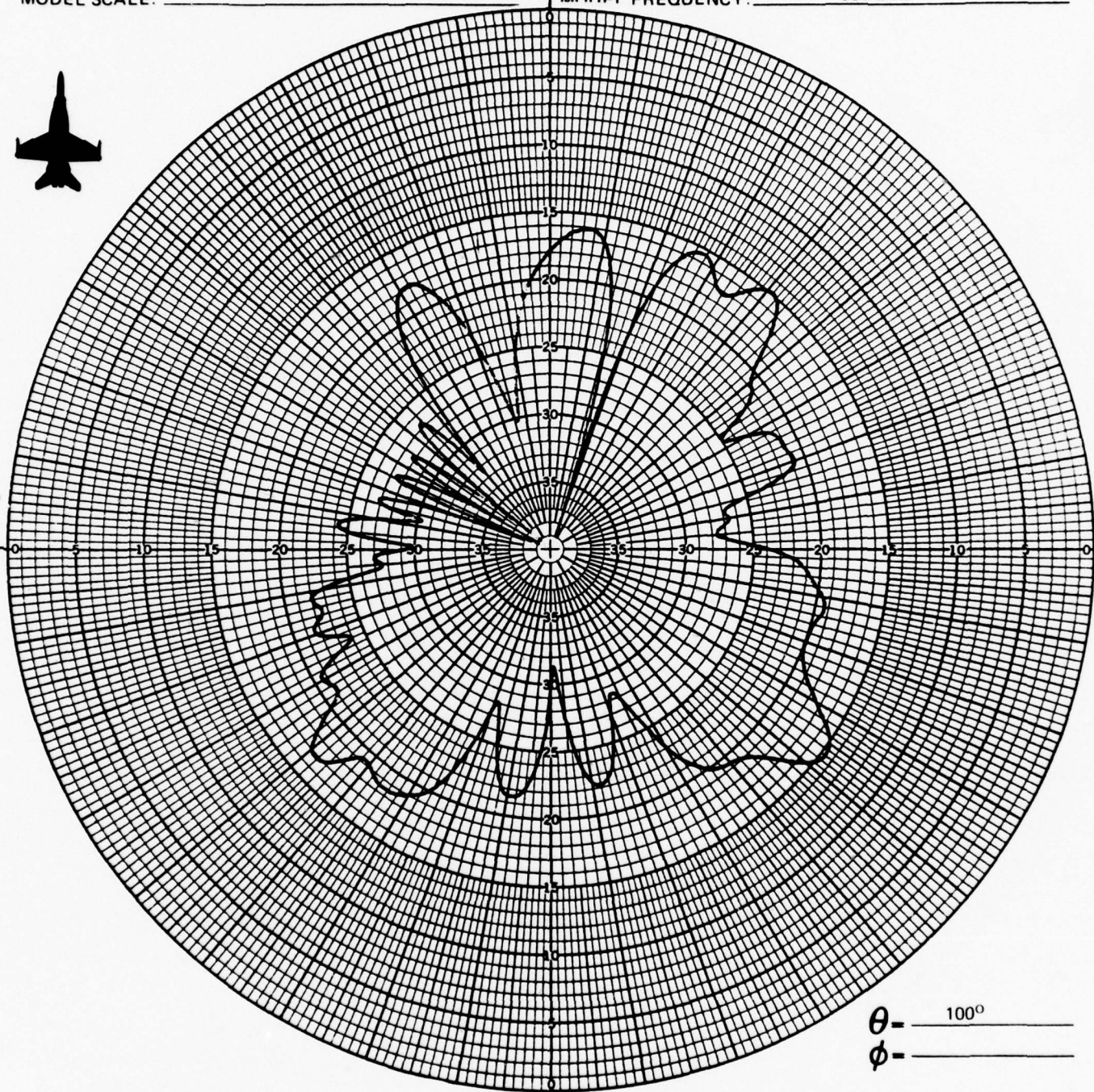
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/4

TEST IDENT.: 703-174 (F-18)
FULL SCALE FREQUENCY: 145 MHz
MODEL FREQUENCY: 580 MHz



θ - 100°
 ϕ - _____

CONFIGURATION: 30
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: ☒ E ϕ ☐ E θ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: 285 FT
OBSERVER: PN, BM DATE: 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE

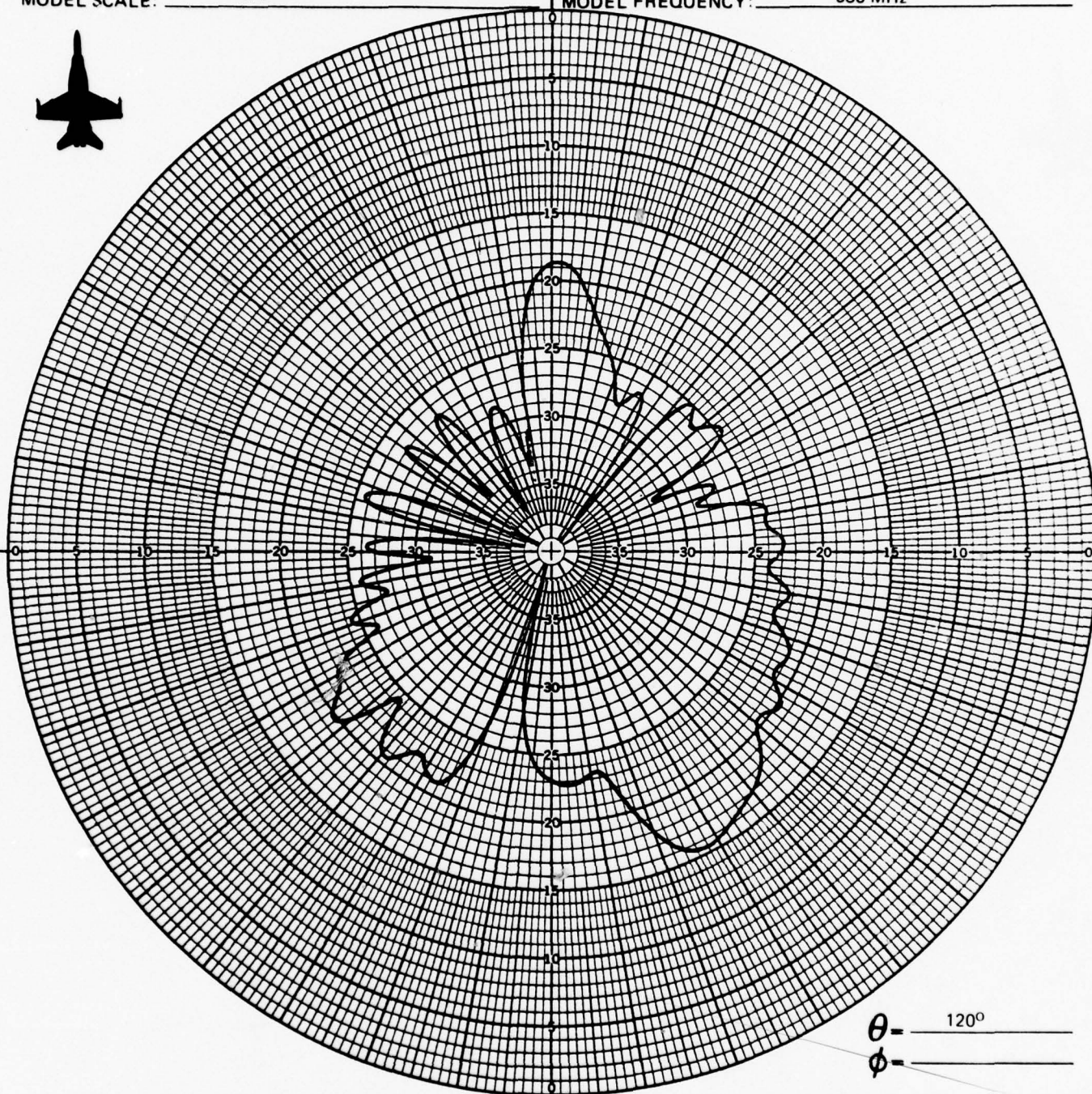
ANTENNA LOCATION: _____ FINCAP

MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)

FULL SCALE FREQUENCY: _____ 145 MHz

MODEL FREQUENCY: _____ 580 MHz



θ = _____ 120°
 ϕ = _____

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE

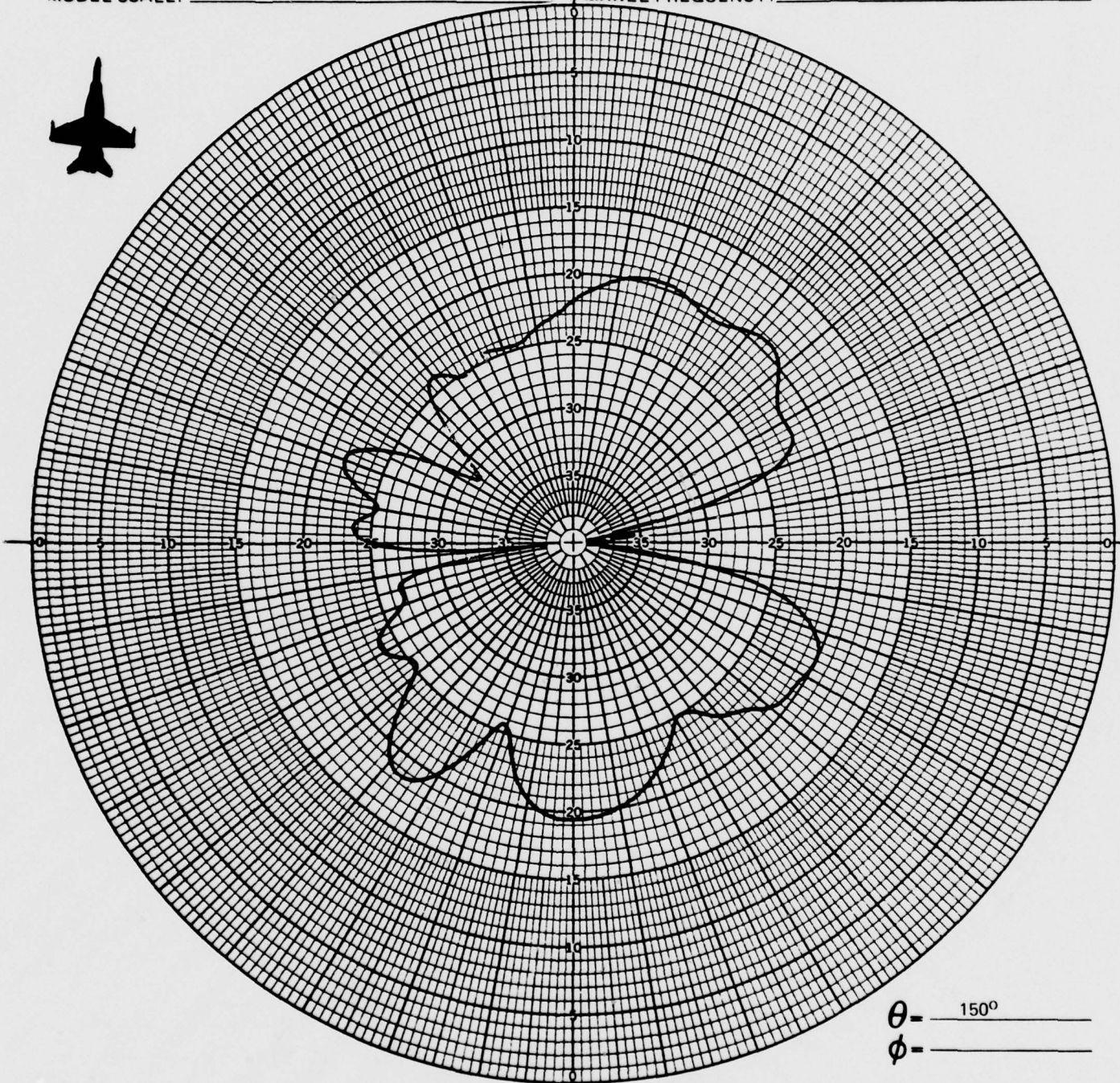
ANTENNA LOCATION: _____ FINCAP

MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)

FULL SCALE FREQUENCY: _____ 145 MHz

MODEL FREQUENCY: _____ 580 MHz



θ - 150°
 ϕ - _____

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

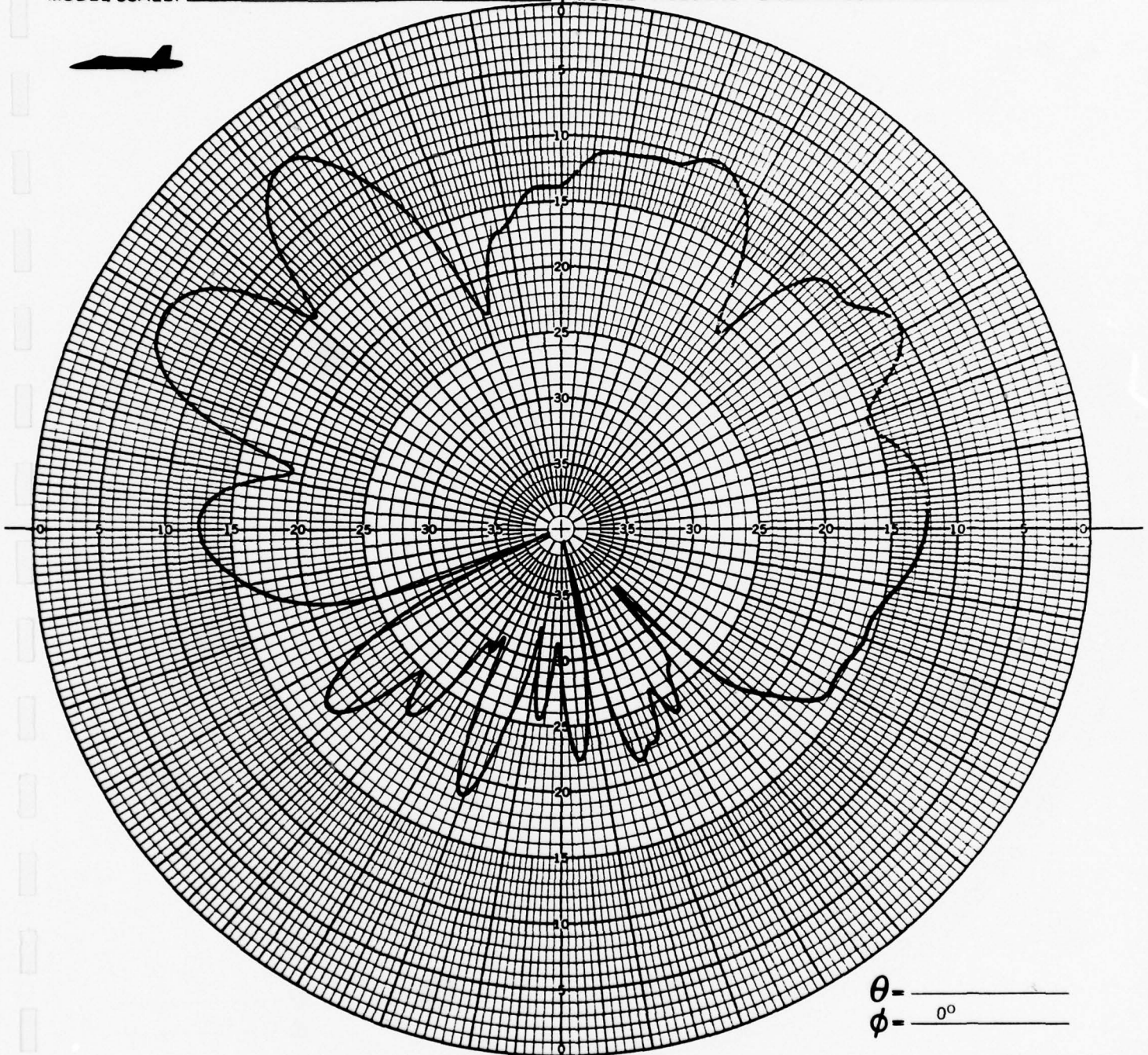
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 174 MHz
MODEL FREQUENCY: _____ 696 MHz



θ = _____
 ϕ = _____ 0°

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE

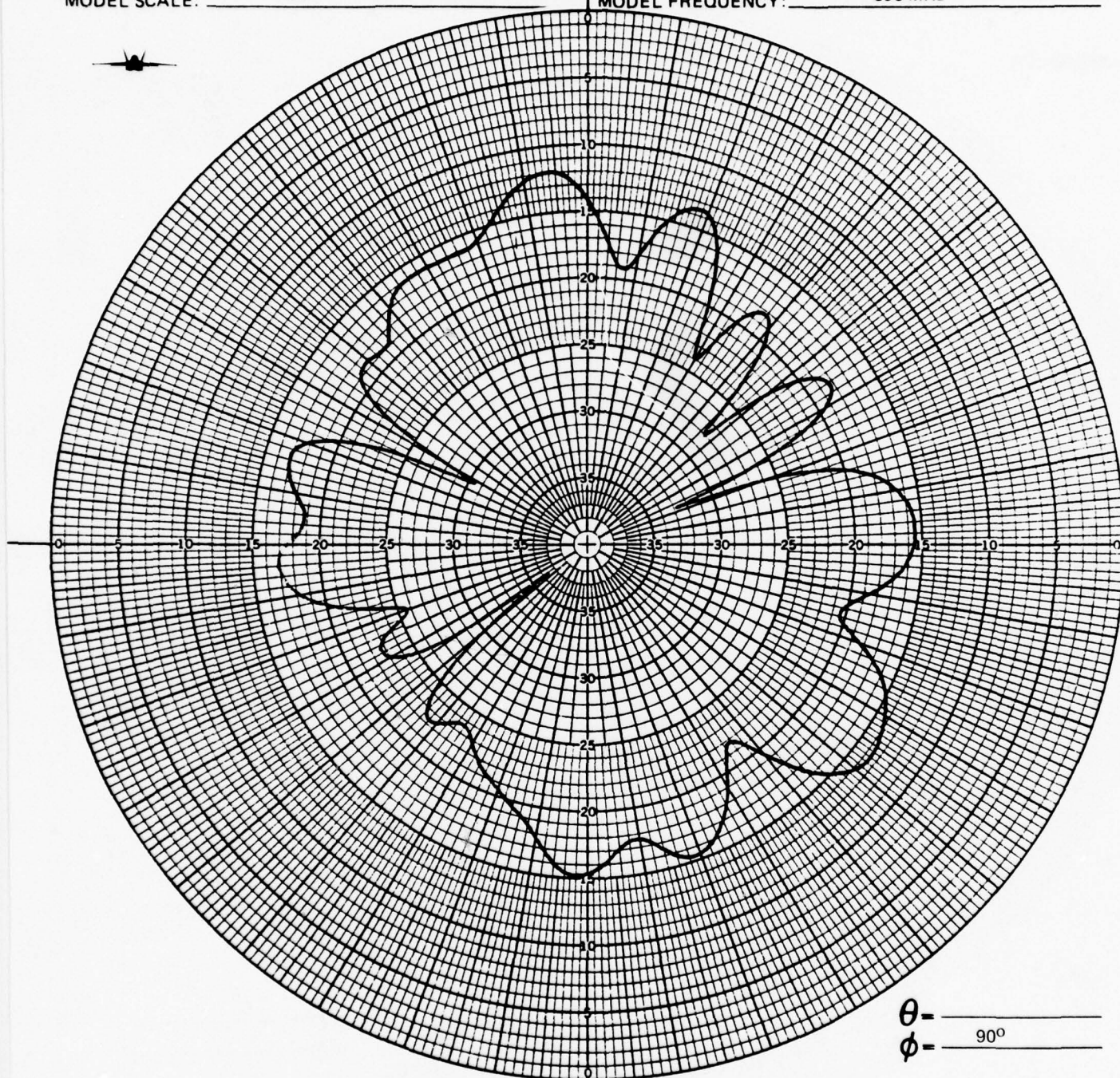
ANTENNA LOCATION: _____ FINCAP

MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)

FULL SCALE FREQUENCY: _____ 174 MHz

MODEL FREQUENCY: _____ 696 MHz



θ = _____
 ϕ = 90°

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: E ϕ ☐ E θ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

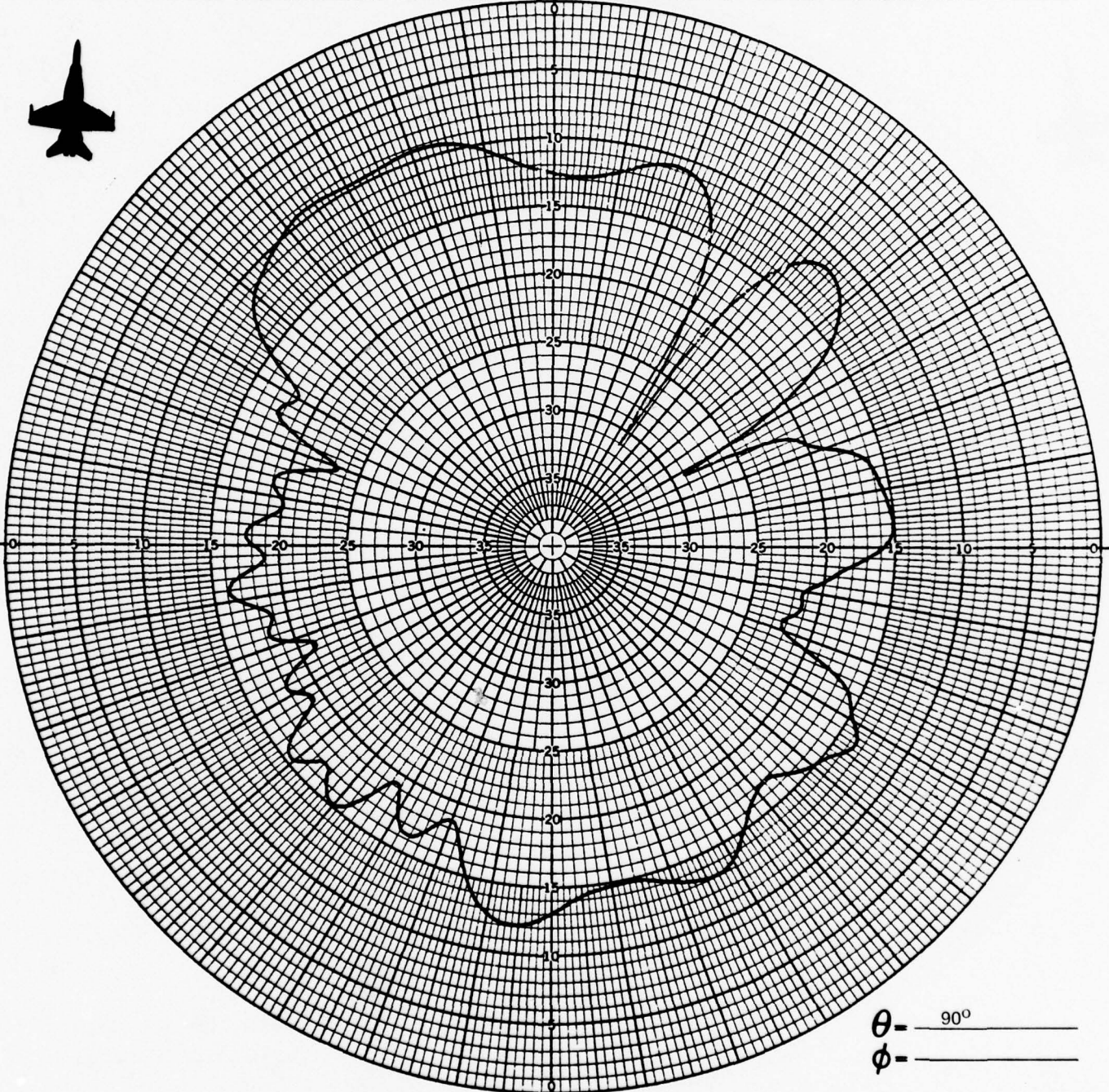
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 174 MHz
MODEL FREQUENCY: _____ 696 MHz



θ - 90°
 ϕ - _____

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

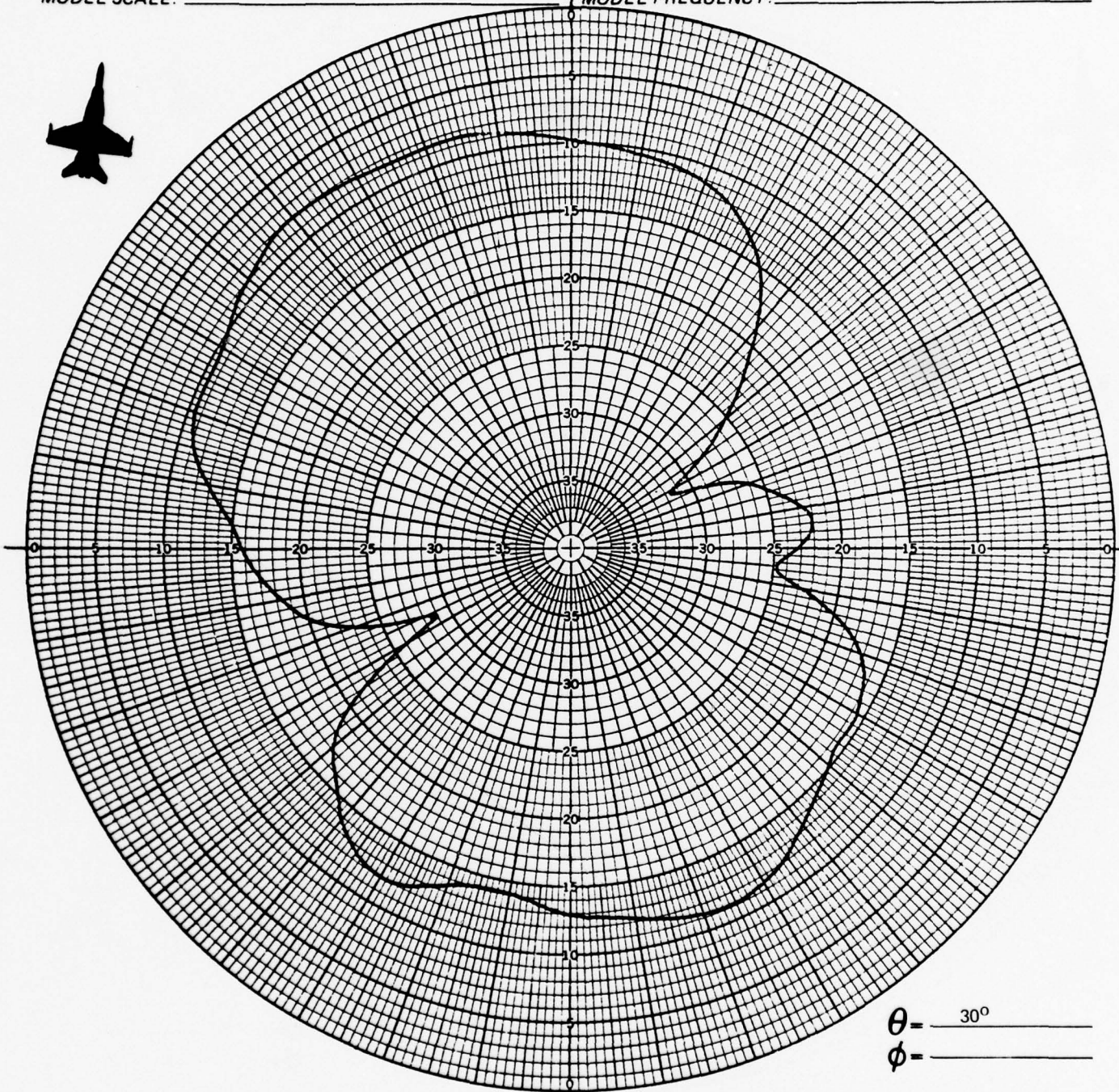
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 174 MHz
MODEL FREQUENCY: _____ 696 MHz



θ = _____ 30°
 ϕ = _____

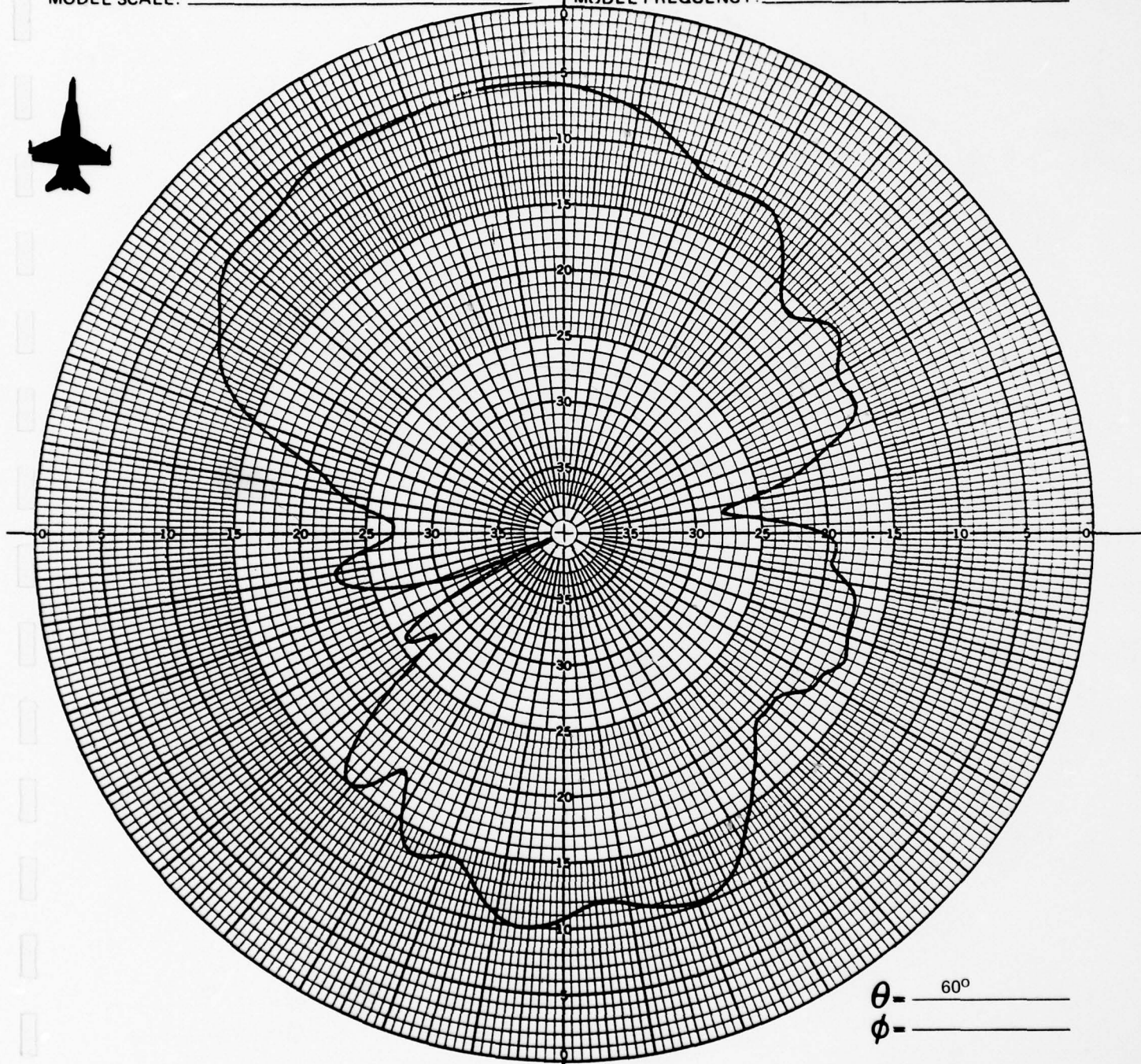
CONFIGURATION: _____ 30
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: E ϕ ☐ E θ ☒ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: _____ 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 174 MHz
MODEL FREQUENCY: _____ 696 MHz



θ - 60°
 ϕ - _____

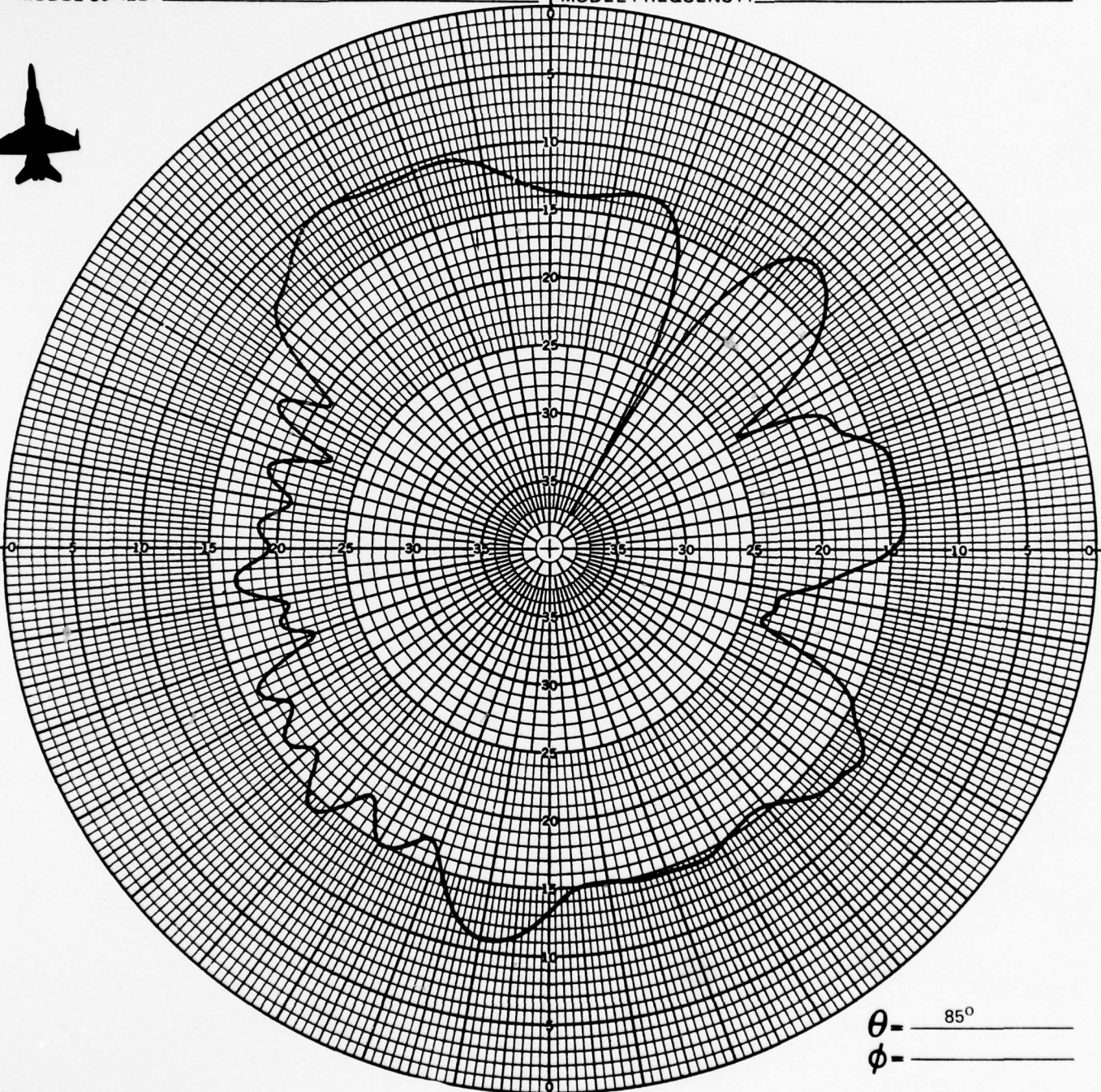
CONFIGURATION: _____ 30
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: _____ 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 174 MHz
MODEL FREQUENCY: _____ 696 MHz



θ - 85°
 ϕ -

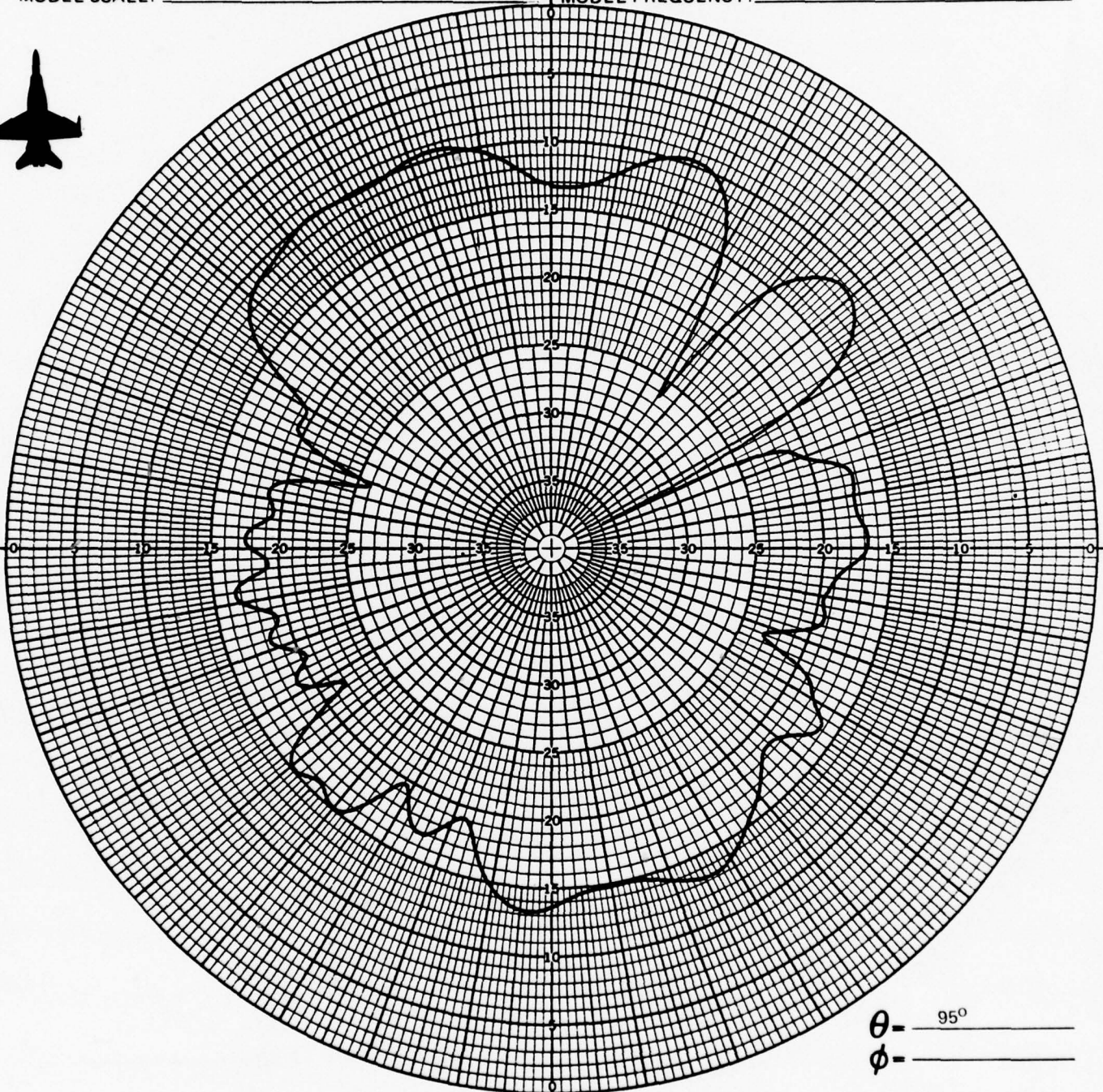
CONFIGURATION: _____ 30
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: E ϕ ☐ E θ ☒ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: _____ 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 174 MHz
MODEL FREQUENCY: _____ 696 MHz



θ - 95°
 ϕ - _____

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: E ϕ ☐ E θ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

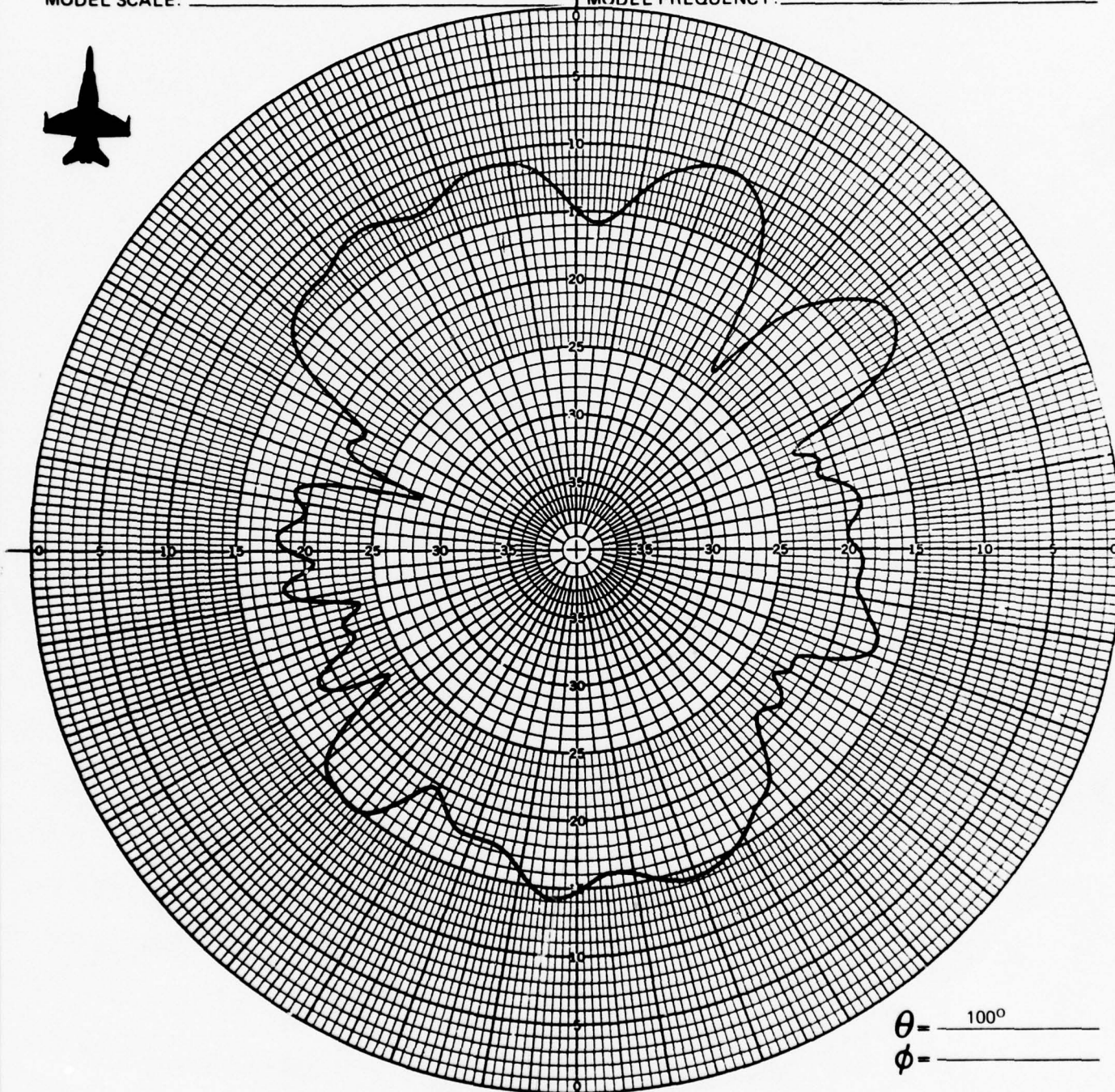
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM _____ DATE: _____ 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 174 MHz
MODEL FREQUENCY: _____ 696 MHz



θ = _____ 100°
 ϕ = _____

CONFIGURATION: _____ 30

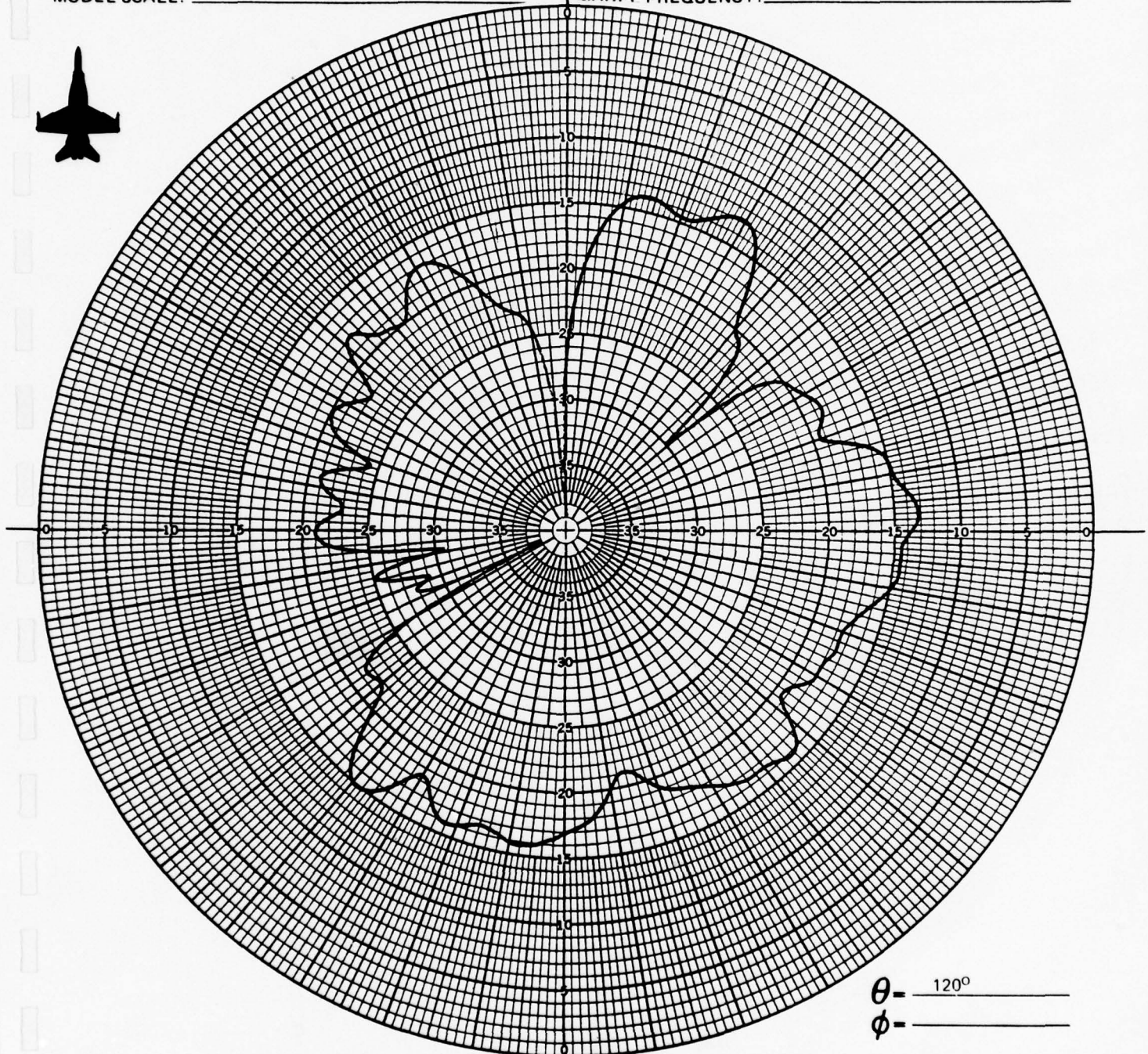
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: E ϕ ☐ E θ ☒ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: _____ 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 174 MHz
MODEL FREQUENCY: _____ 696 MHz



θ - 120°
 ϕ - _____

CONFIGURATION: _____ 30

INTEGRATOR COUNT: _____

REMARKS: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

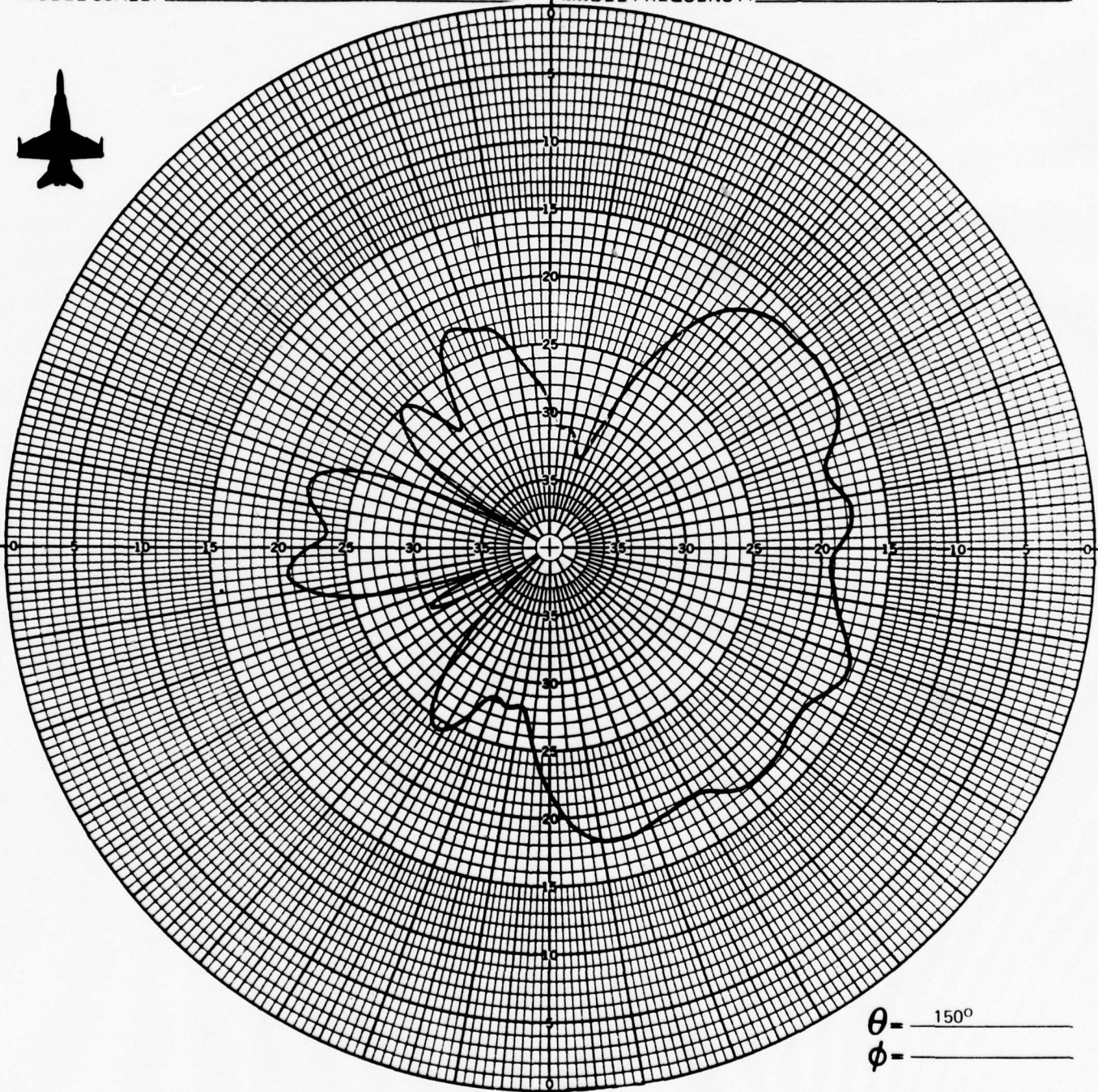
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 174 MHz
MODEL FREQUENCY: _____ 696 MHz



θ - _____ 150°
 ϕ - _____

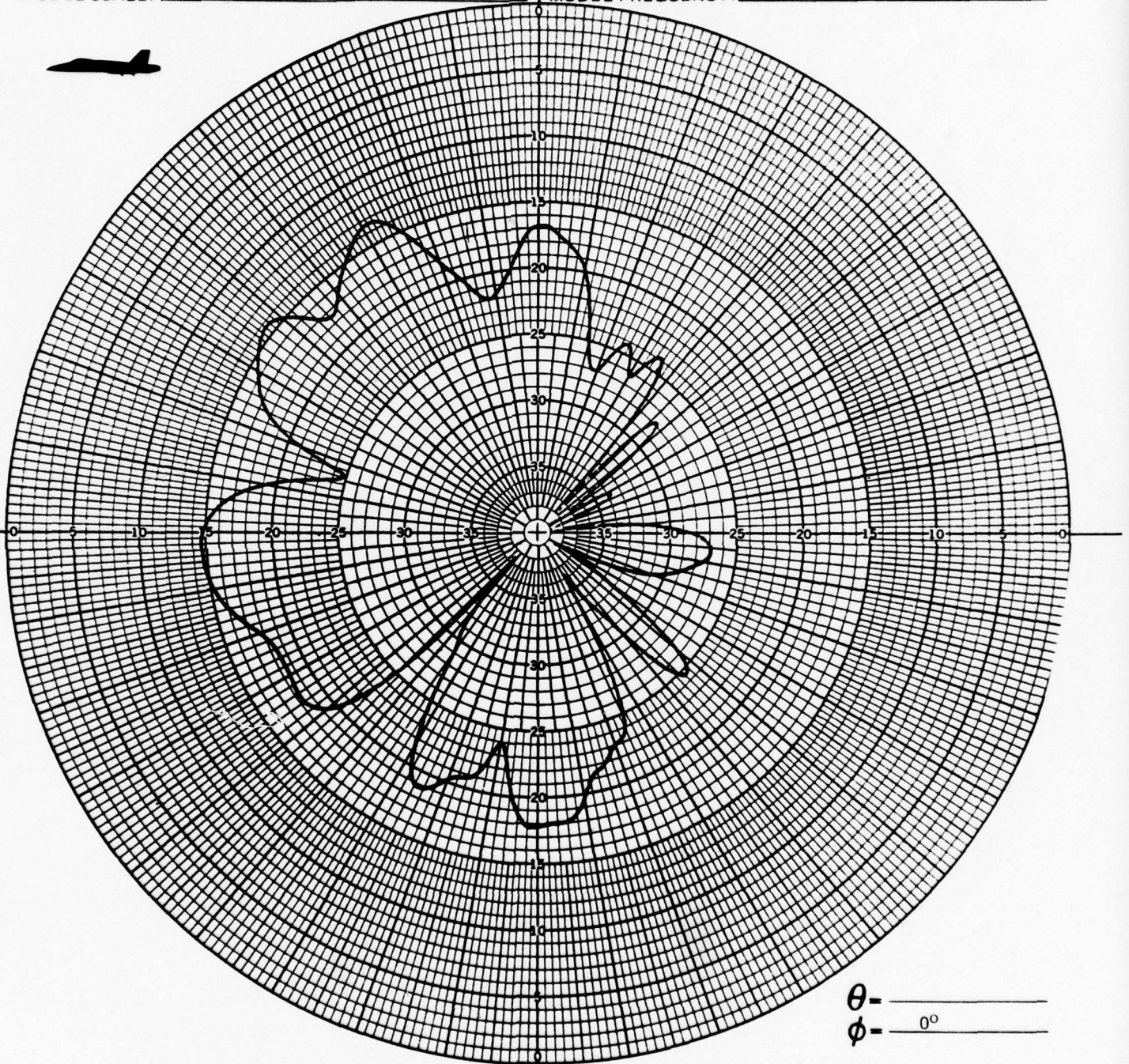
CONFIGURATION: _____ 30
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: E ☒ ϕ ☐ E θ ☒ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: _____ 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 174 MHz
MODEL FREQUENCY: _____ 696 MHz



CONFIGURATION: _____ 30

REMARKS _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 4-29-77

ANTENNA: FLYING PROTOTYPE

ANTENNA LOCATION: FINCAP

MODEL SCALE: 1/4

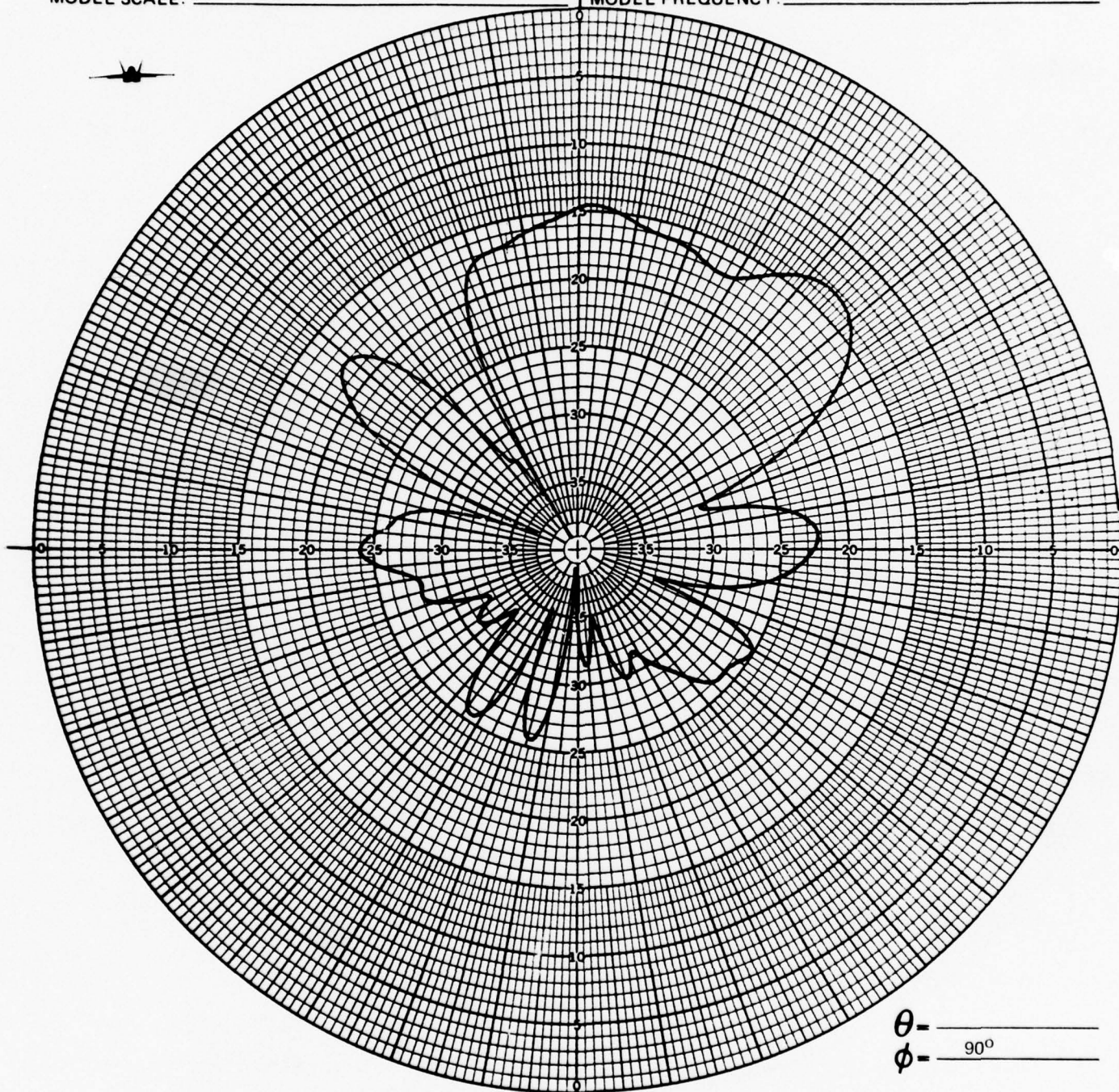
DOCUMENT

REVISION

TEST IDENT.: 703-174 (F-18)

FULL SCALE FREQUENCY: 174 MHz

MODEL FREQUENCY: 696 MHz



θ -

ϕ -

90°

CONFIGURATION: 30

REMARKS:

INTEGRATOR COUNT:

POLARIZATION: ☒ E ϕ ☒ E θ ☐ OTHER:

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM

DATE: 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE

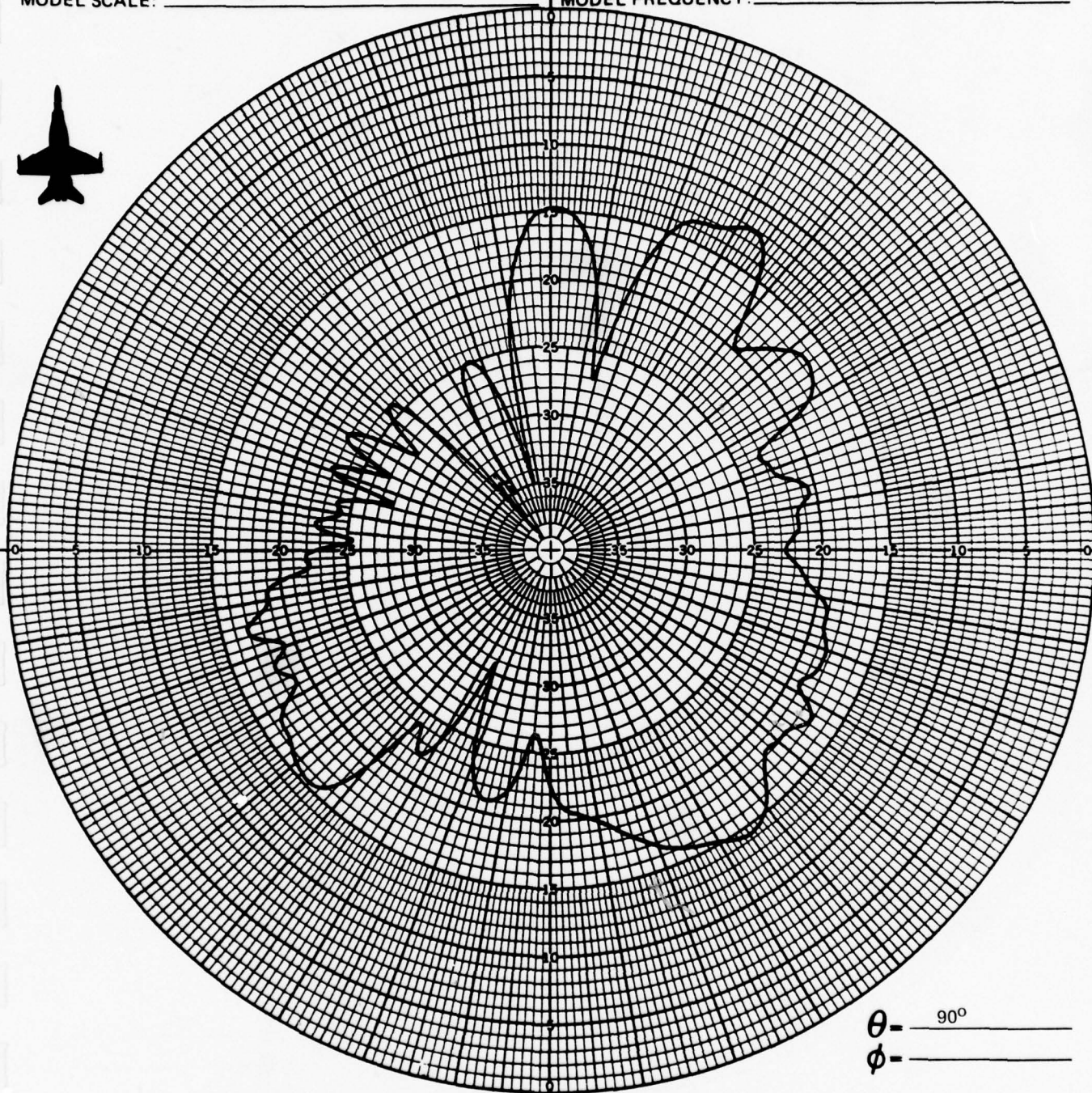
ANTENNA LOCATION: _____ FINCAP

MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)

FULL SCALE FREQUENCY: _____ 174 MHz

MODEL FREQUENCY: _____ 696 MHz



θ - 90°
 ϕ - _____

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

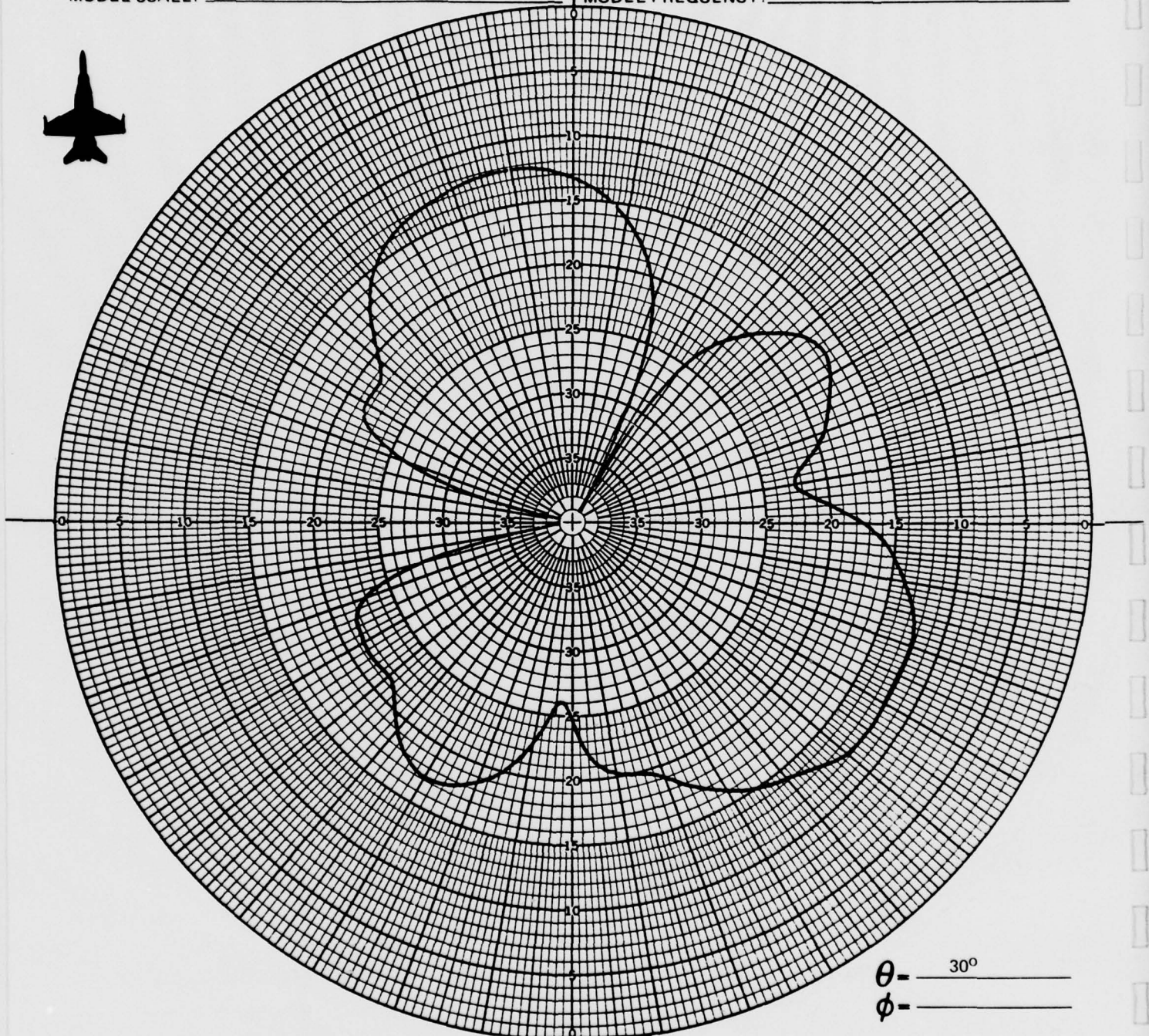
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 174 MHz
MODEL FREQUENCY: _____ 696 MHz



θ - 30°
 ϕ - _____

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 4-29-77

DOCUMENT _____

REVISION _____

ANTENNA: _____ FLYING PROTOTYPE

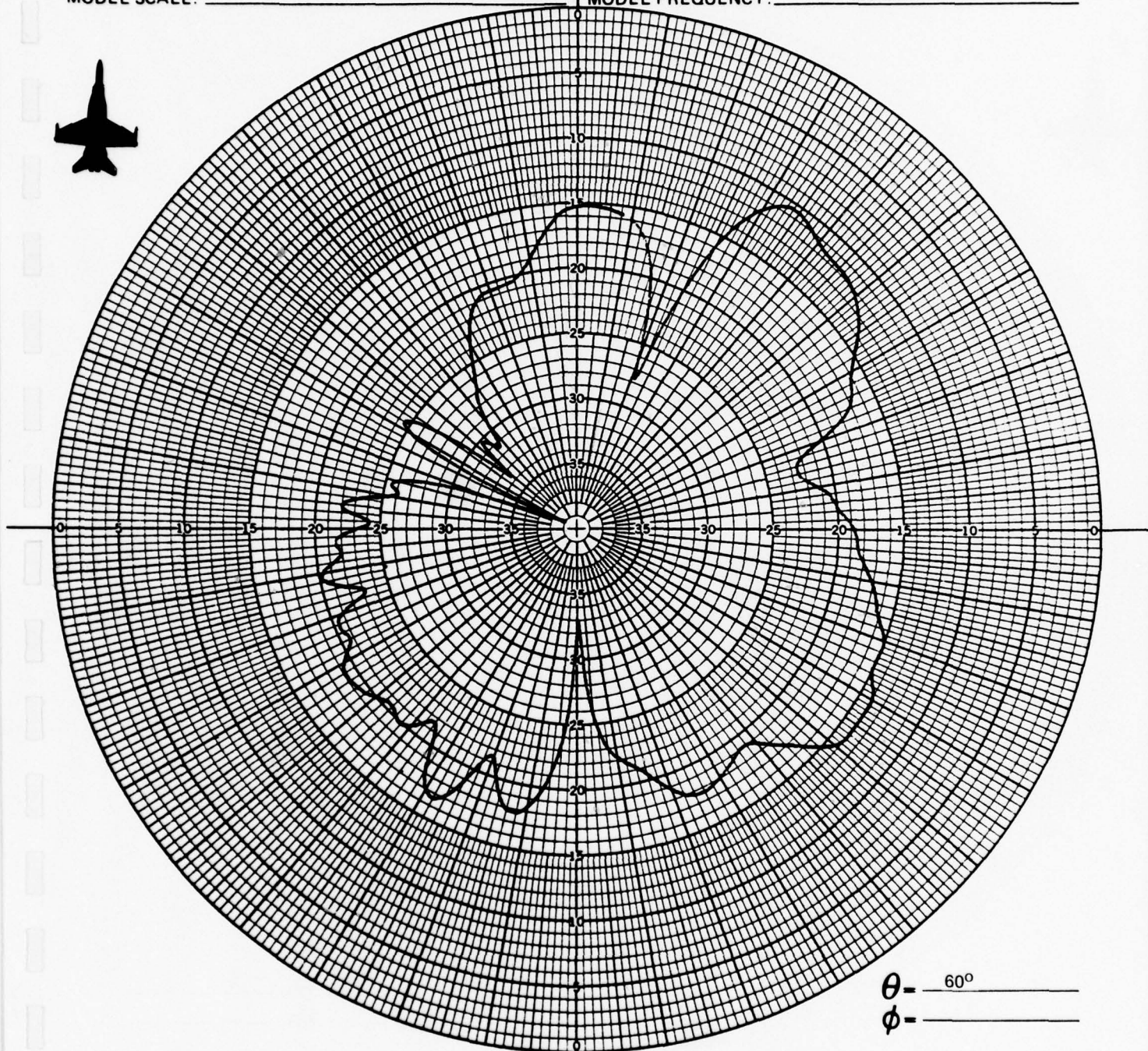
ANTENNA LOCATION: _____ FINCAP

MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)

FULL SCALE FREQUENCY: _____ 174 MHz

MODEL FREQUENCY: _____ 696 MHz

 θ - 60°
 ϕ - _____

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: E ☒ ϕ ☐ E θ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

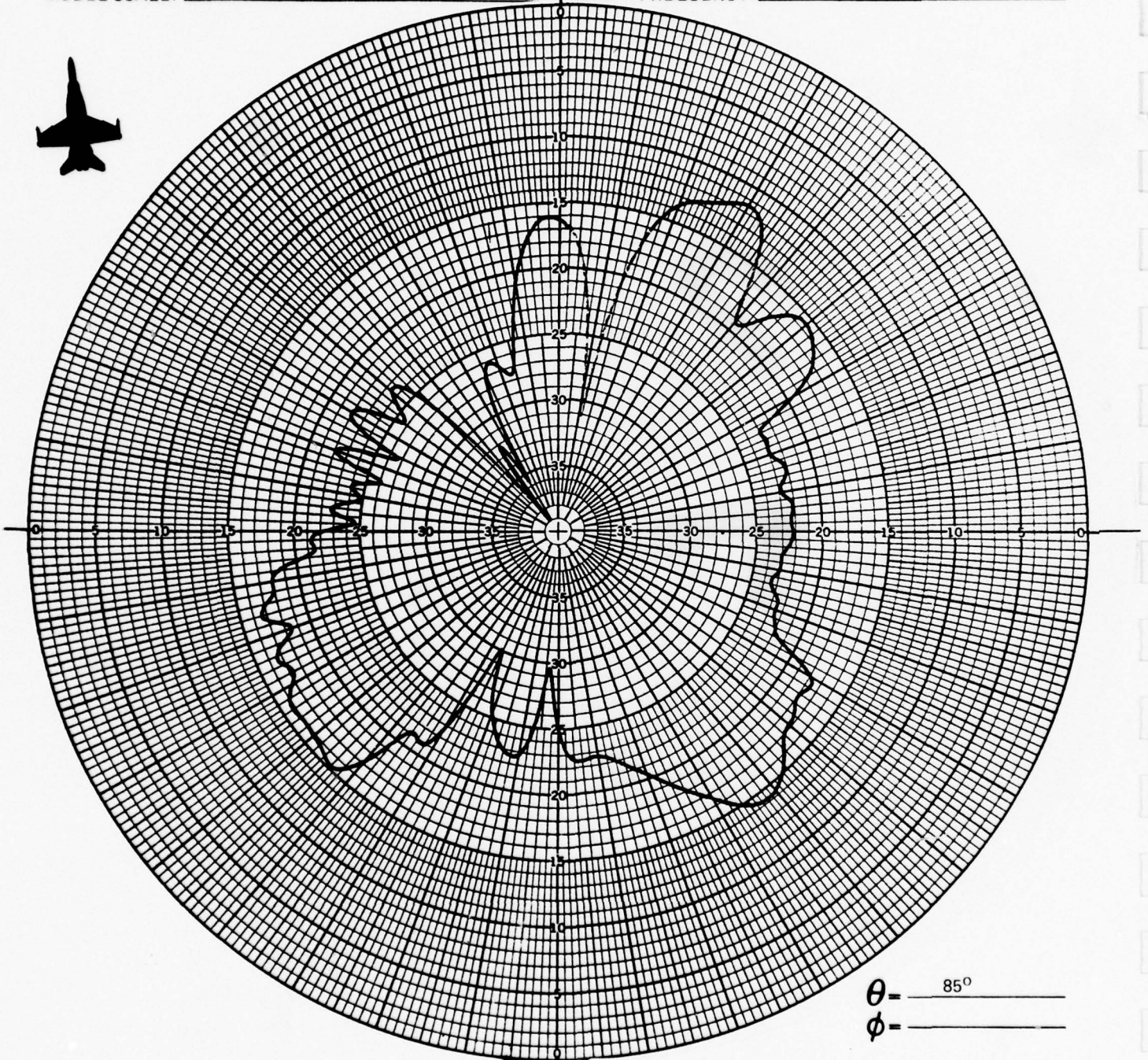
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 174 MHz
MODEL FREQUENCY: _____ 696 MHz



θ = _____ 85°
 ϕ = _____

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

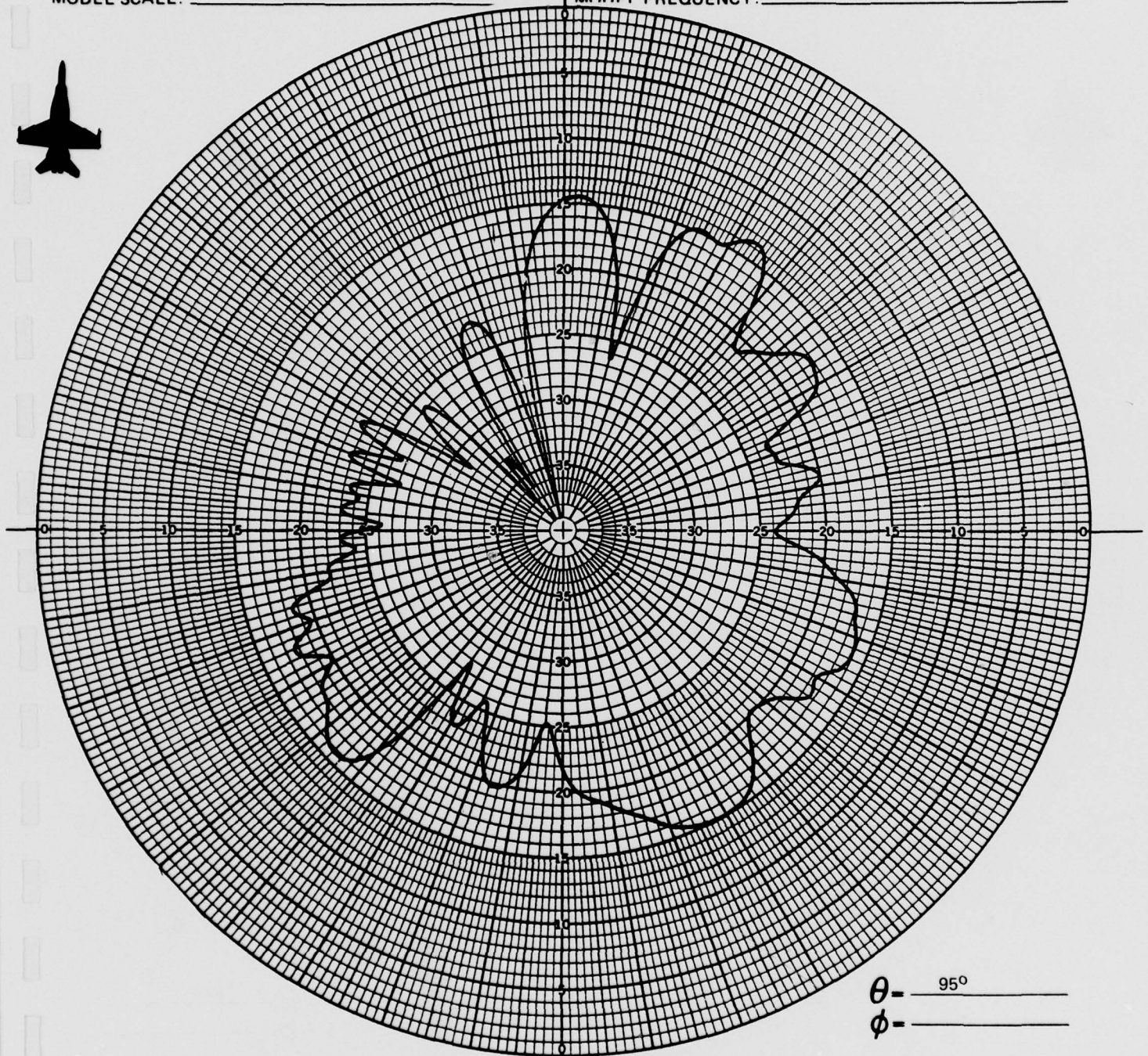
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM _____ DATE: _____ 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 174 MHz
MODEI FREQUENCY: _____ 696 MHz



θ - 95°
 ϕ - _____

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: E ☒ ϕ ☐ E θ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE

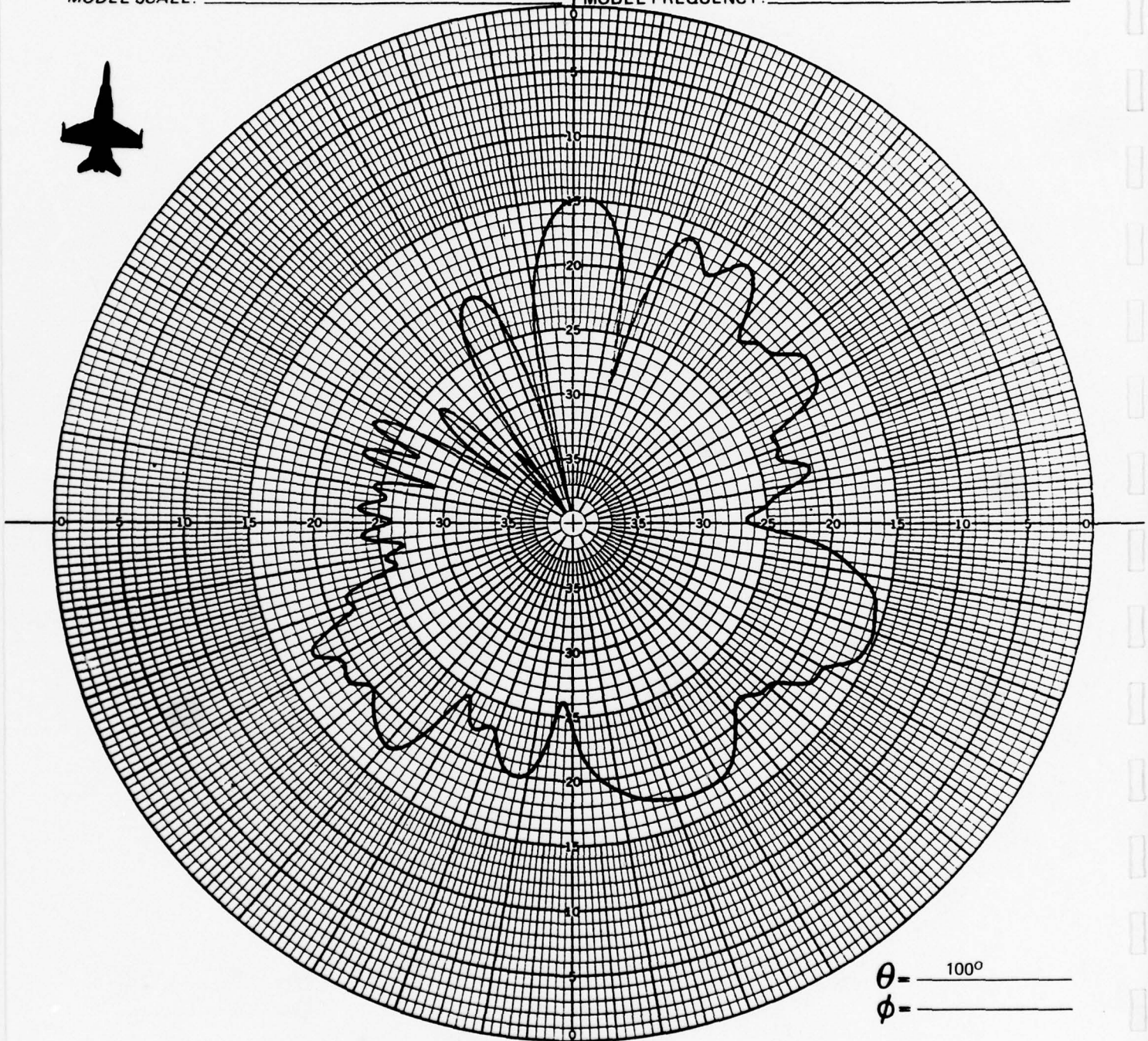
ANTENNA LOCATION: _____ FINCAP

MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)

FULL SCALE FREQUENCY: _____ 174 MHz

MODEL FREQUENCY: _____ 696 MHz



θ - _____ 100°
 ϕ - _____

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE

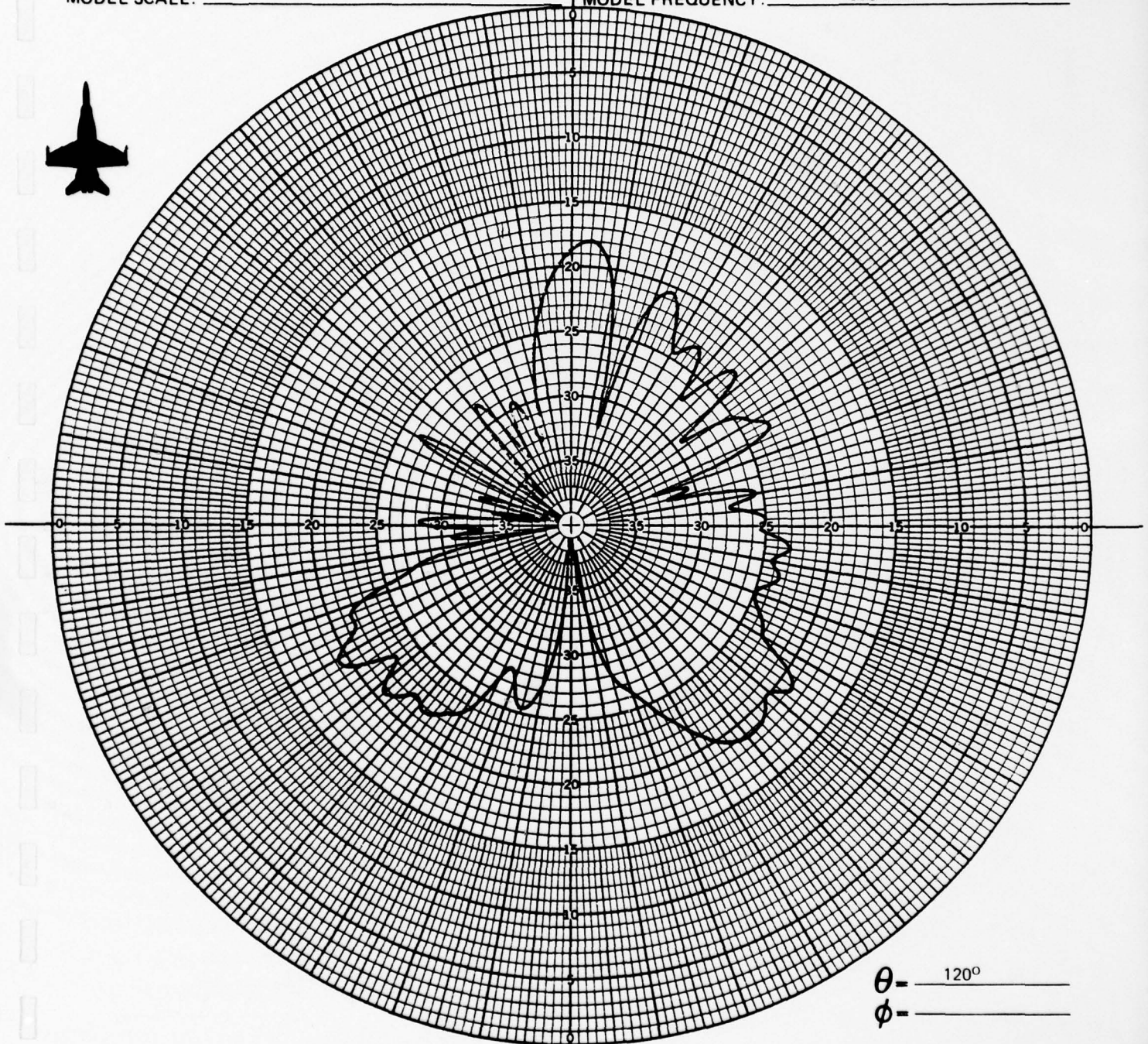
ANTENNA LOCATION: _____ FINCAP

MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)

FULL SCALE FREQUENCY: _____ 174 MHz

MODEL FREQUENCY: _____ 696 MHz



θ = _____ 120°
 ϕ = _____

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

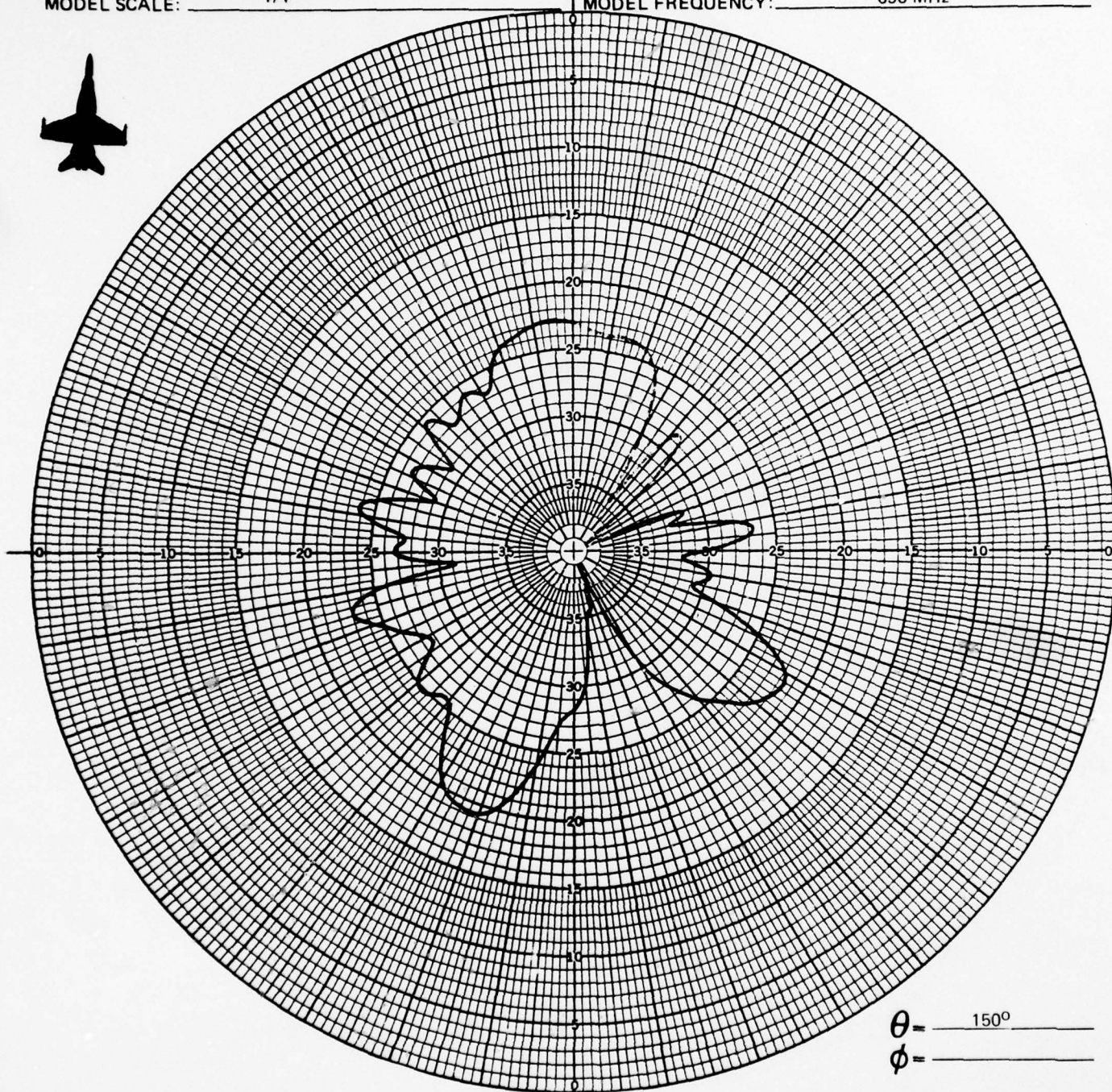
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 174 MHz
MODEL FREQUENCY: _____ 696 MHz



$\theta =$ _____ 150°
 $\phi =$ _____

CONFIGURATION _____ 30

REMARKS _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 4-29-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE

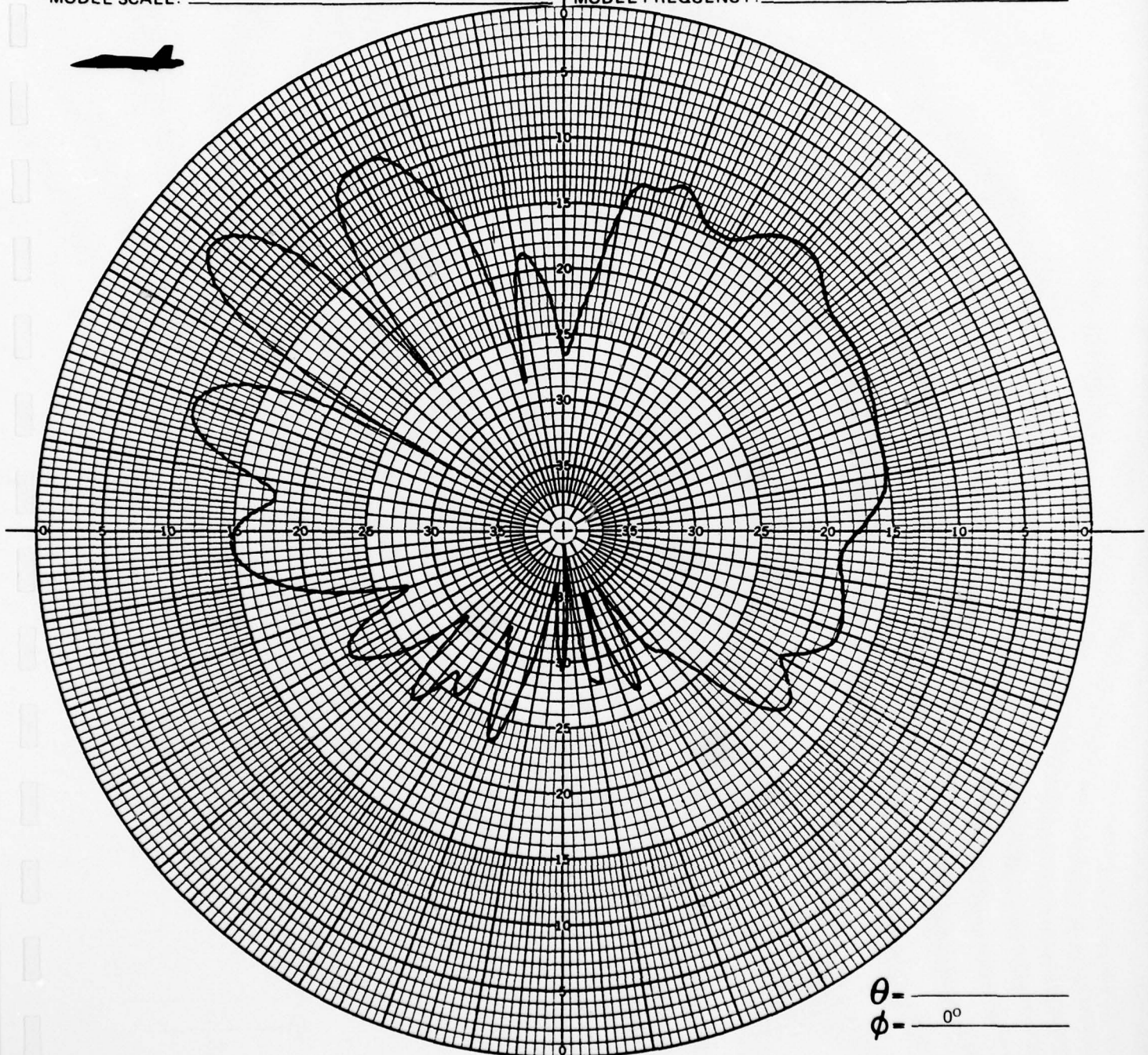
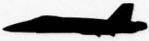
ANTENNA LOCATION: _____ FINCAP

MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)

FULL SCALE FREQUENCY: _____ 225 MHz

MODEL FREQUENCY: _____ 900 MHz



θ - _____
 ϕ - _____ 0°

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

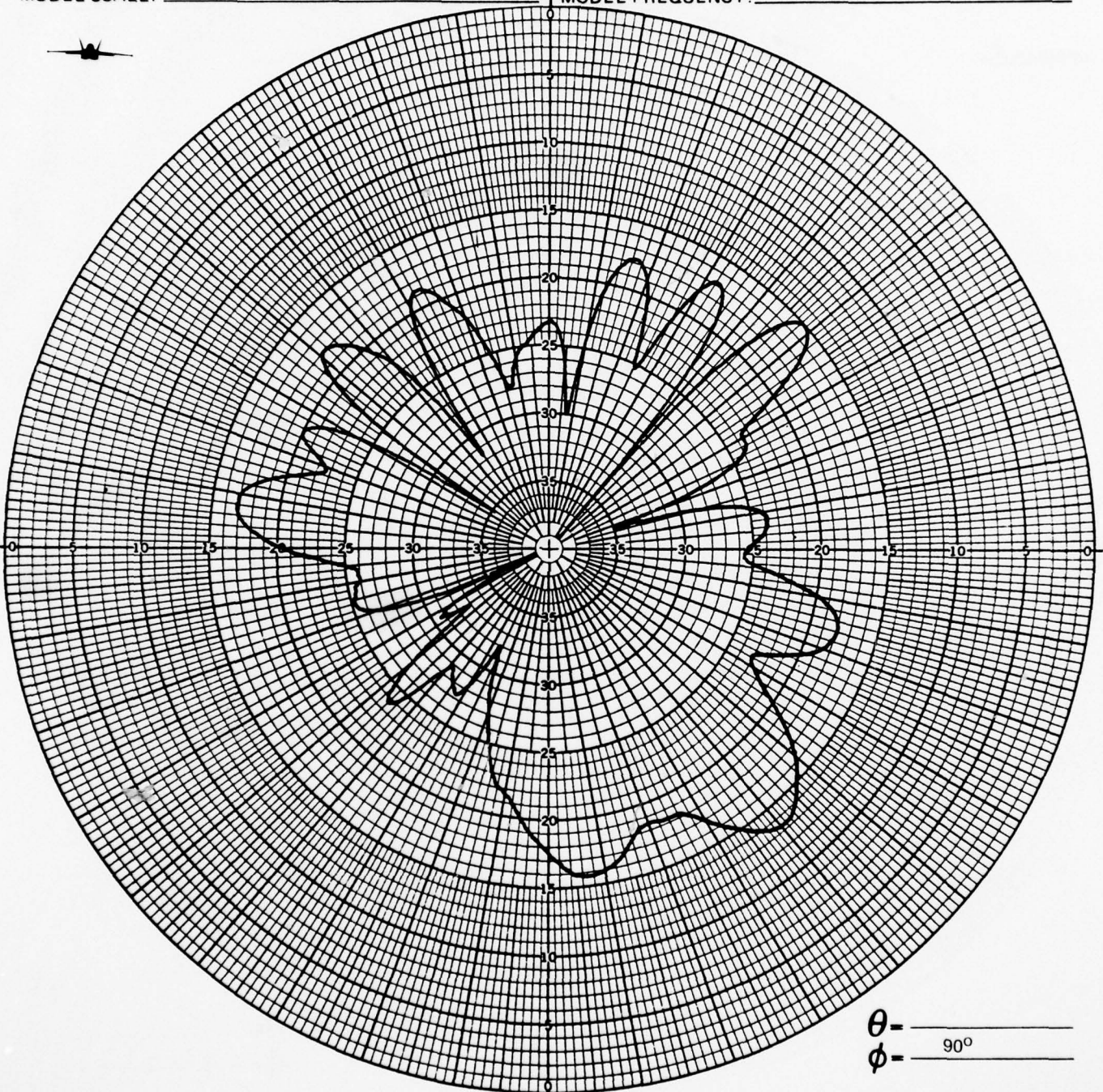
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 4-28-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 225 MHz
MODEL FREQUENCY: _____ 900 MHz



θ - _____
 ϕ - _____ 90°

CONFIGURATION: _____ 30
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: _____ 4-28-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE

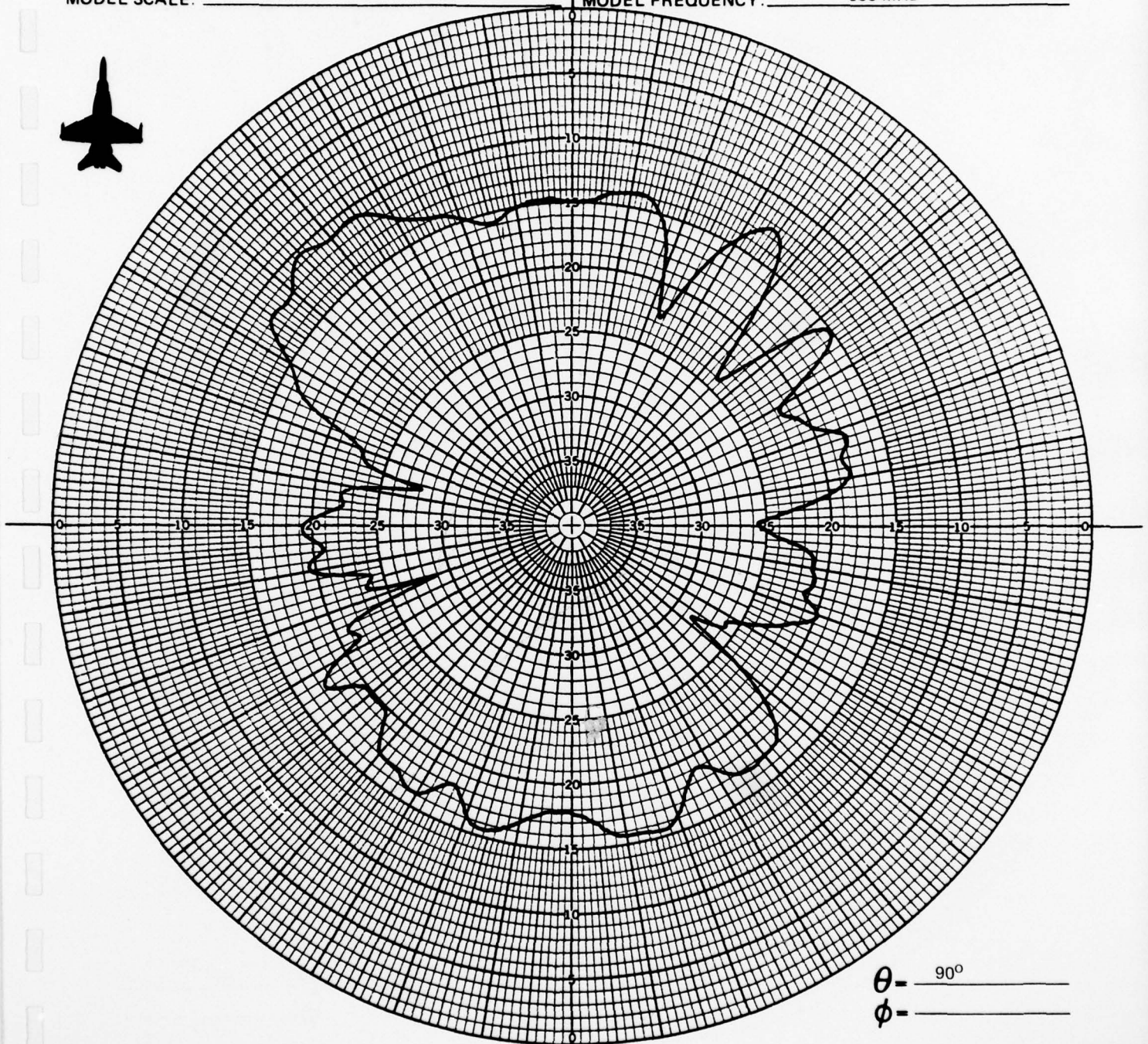
TEST IDENT.: _____ 703-174 (F-18)

ANTENNA LOCATION: _____ FINCAP

FULL SCALE FREQUENCY: _____ 225 MHz

MODEL SCALE: _____ 1/4

MODEL FREQUENCY: _____ 900 MHz



θ - 90°
 ϕ - _____

CONFIGURATION: _____ 30

INTEGRATOR COUNT: _____

REMARKS: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

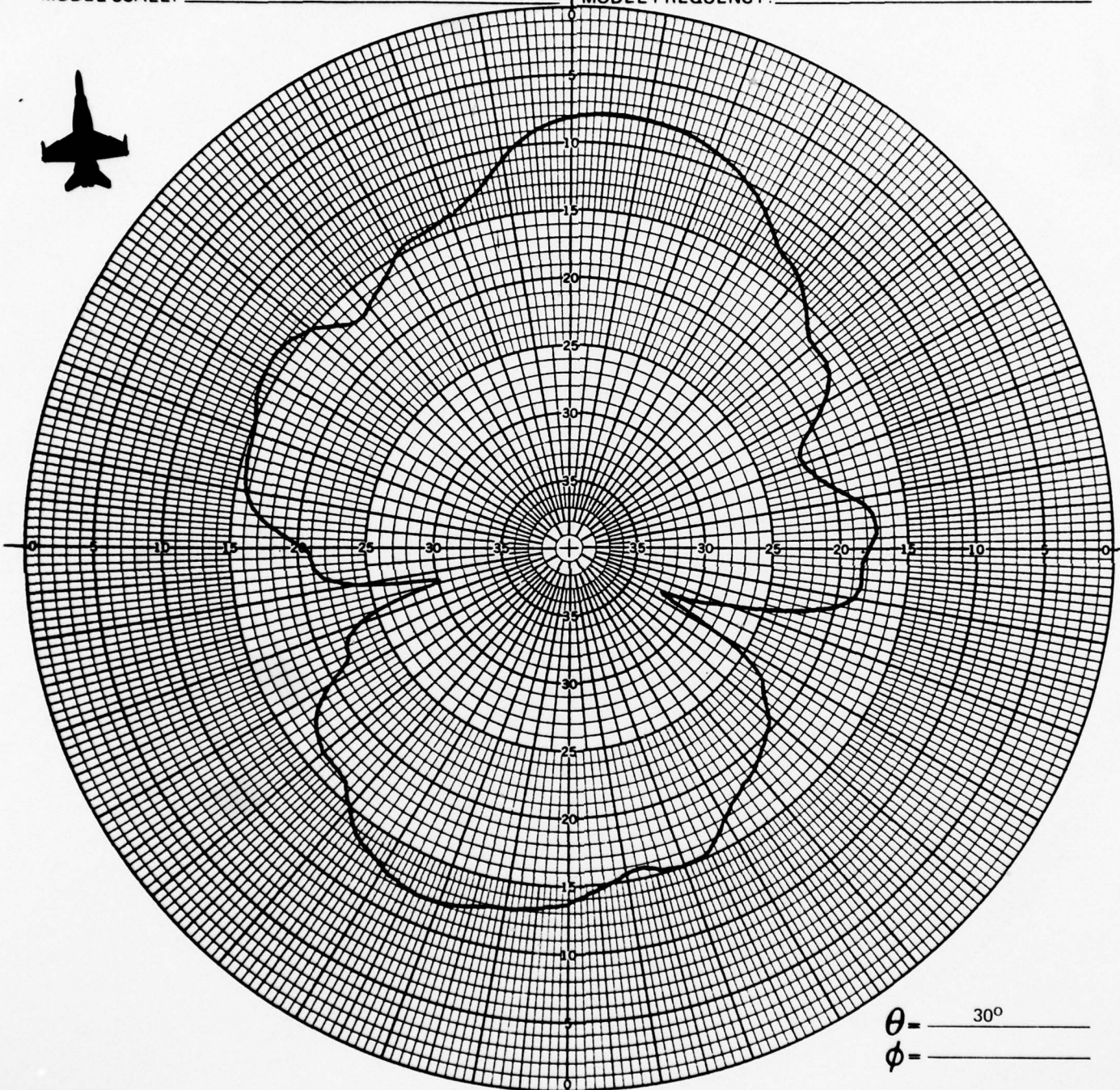
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 4-28-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 225 MHz
MODEL FREQUENCY: _____ 900 MHz



θ = _____ 30°
 ϕ = _____

CONFIGURATION: _____ 30

INTEGRATOR COUNT: _____

REMARKS: _____

POLARIZATION: E ☒ ϕ ☐ E θ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

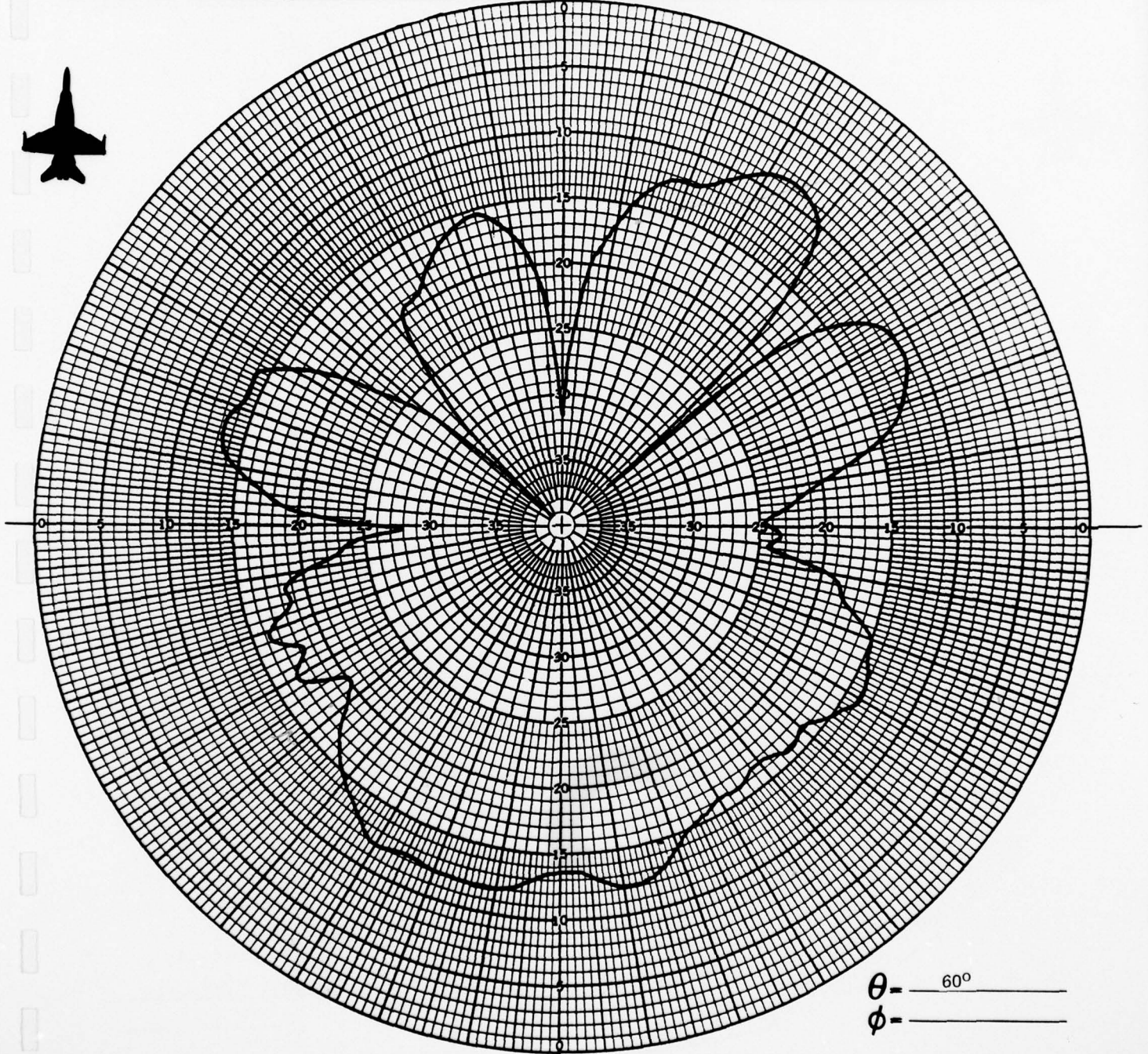
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 4-28-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/4

TEST IDENT.: 703-174 (F-18)
FULL SCALE FREQUENCY: 225 MHz
MODEL FREQUENCY: 900 MHz



θ - 60°
 ϕ - _____

CONFIGURATION: 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

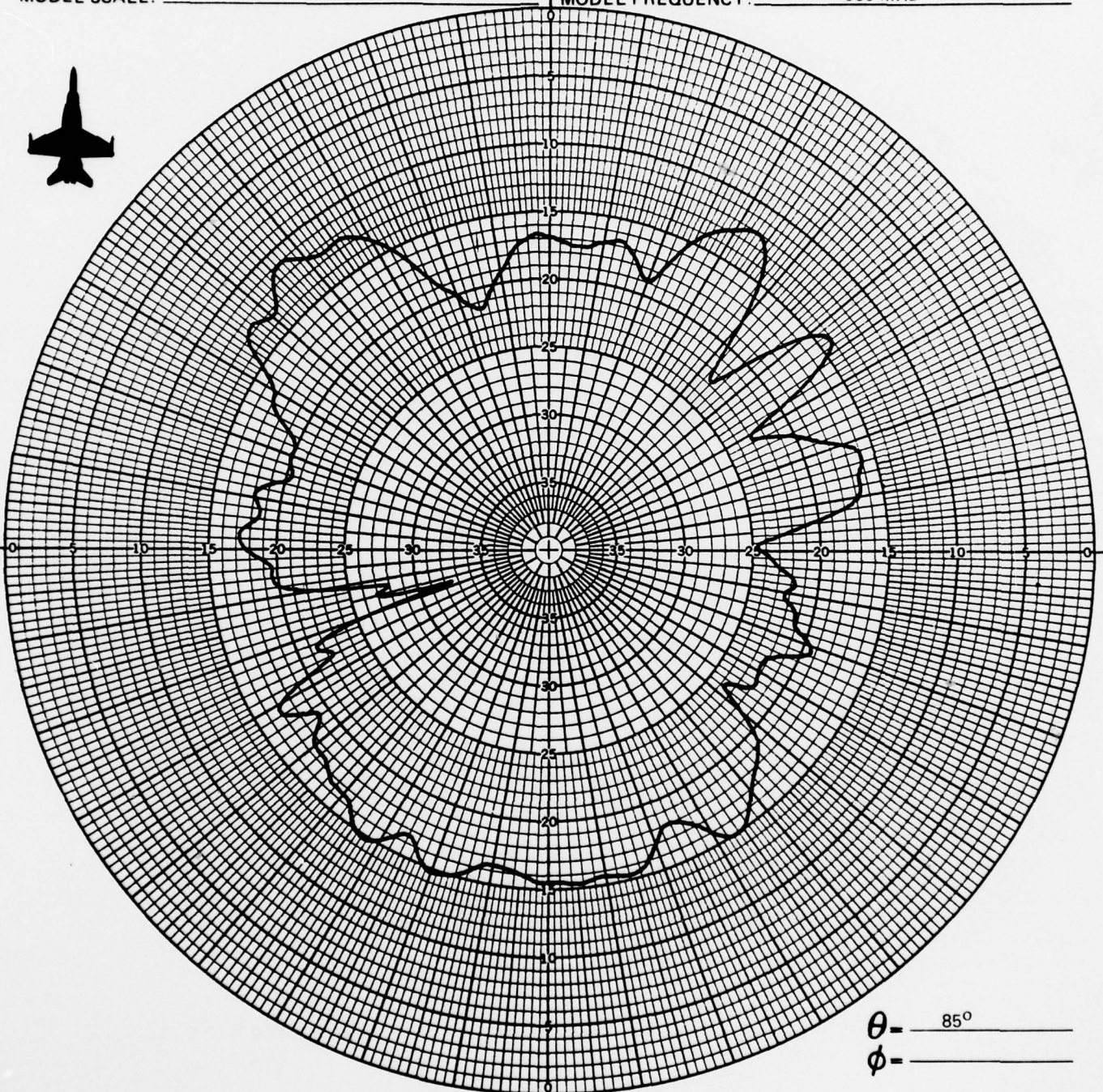
TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 4-28-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 225 MHz
MODEL FREQUENCY: _____ 900 MHz



θ - 85°
 ϕ - _____

CONFIGURATION: _____ 30
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: _____ 4-28-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE

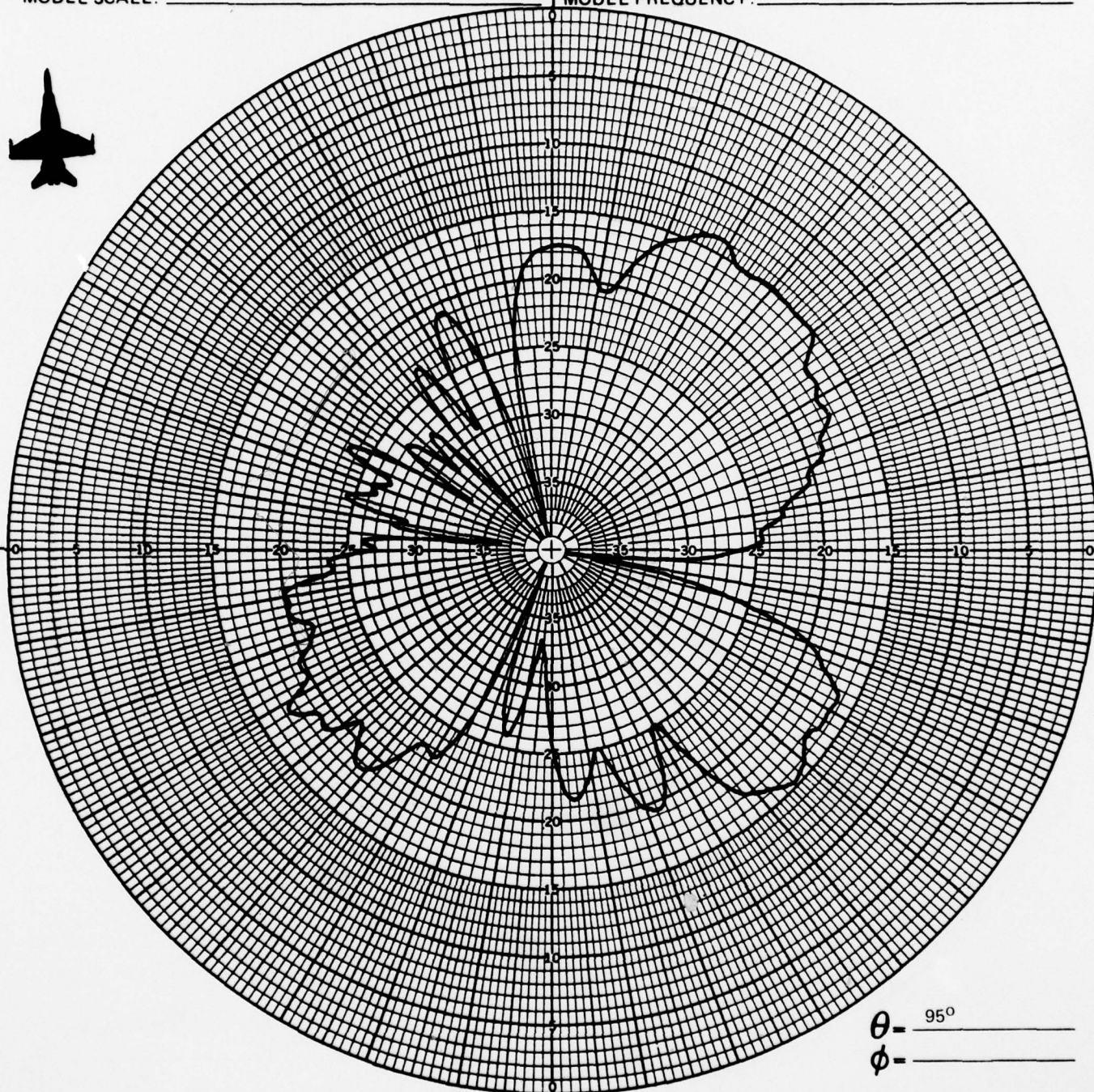
ANTENNA LOCATION: _____ FINCAP

MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)

FULL SCALE FREQUENCY: _____ 225 MHz

MODEL FREQUENCY: _____ 900 MHz



θ - 95°
 ϕ - _____

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: E ☐ ϕ ☐ E ☒ θ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

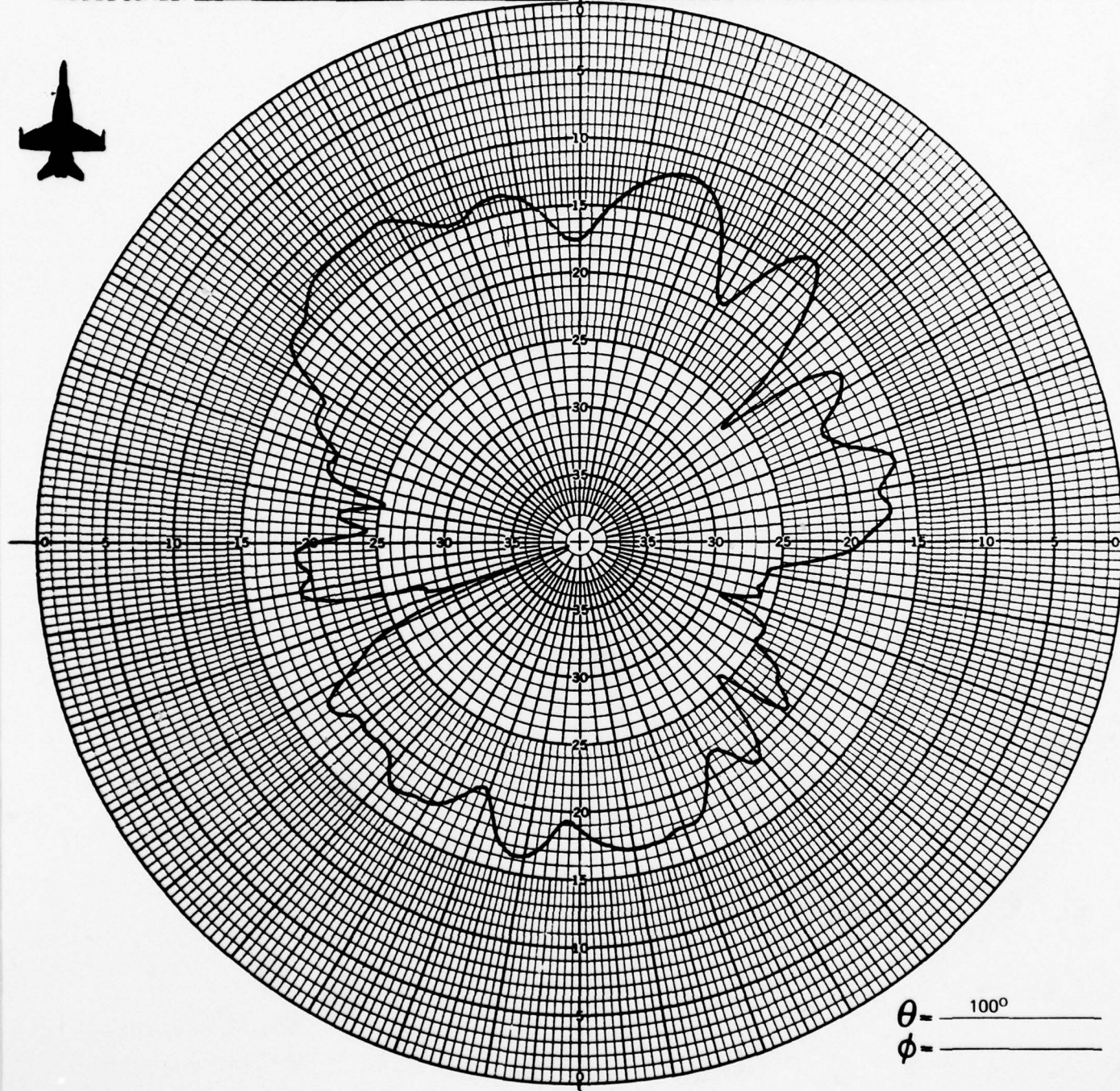
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM _____ DATE: _____ 4-28-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/4

TEST IDENT.: 703-174 (F-18)
FULL SCALE FREQUENCY: 225 MHz
MODEL FREQUENCY: 900 MHz



θ - 100°
 ϕ - _____

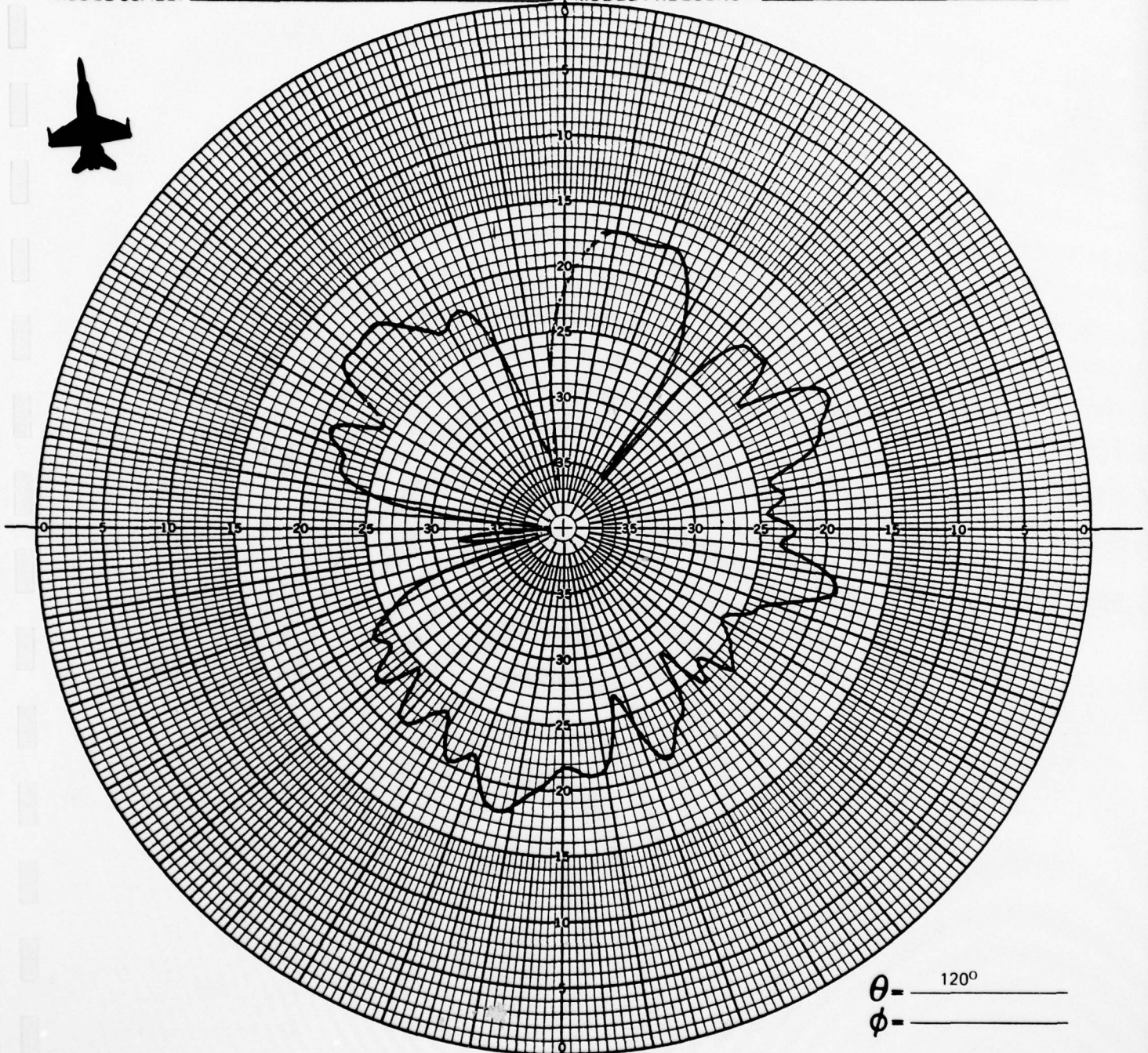
CONFIGURATION: 30
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: 285 FT
OBSERVER: PN, BM DATE: 4-28-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 225 MHz
MODEL FREQUENCY: _____ 900 MHz



θ - _____ 120°
 ϕ - _____

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 4-28-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE

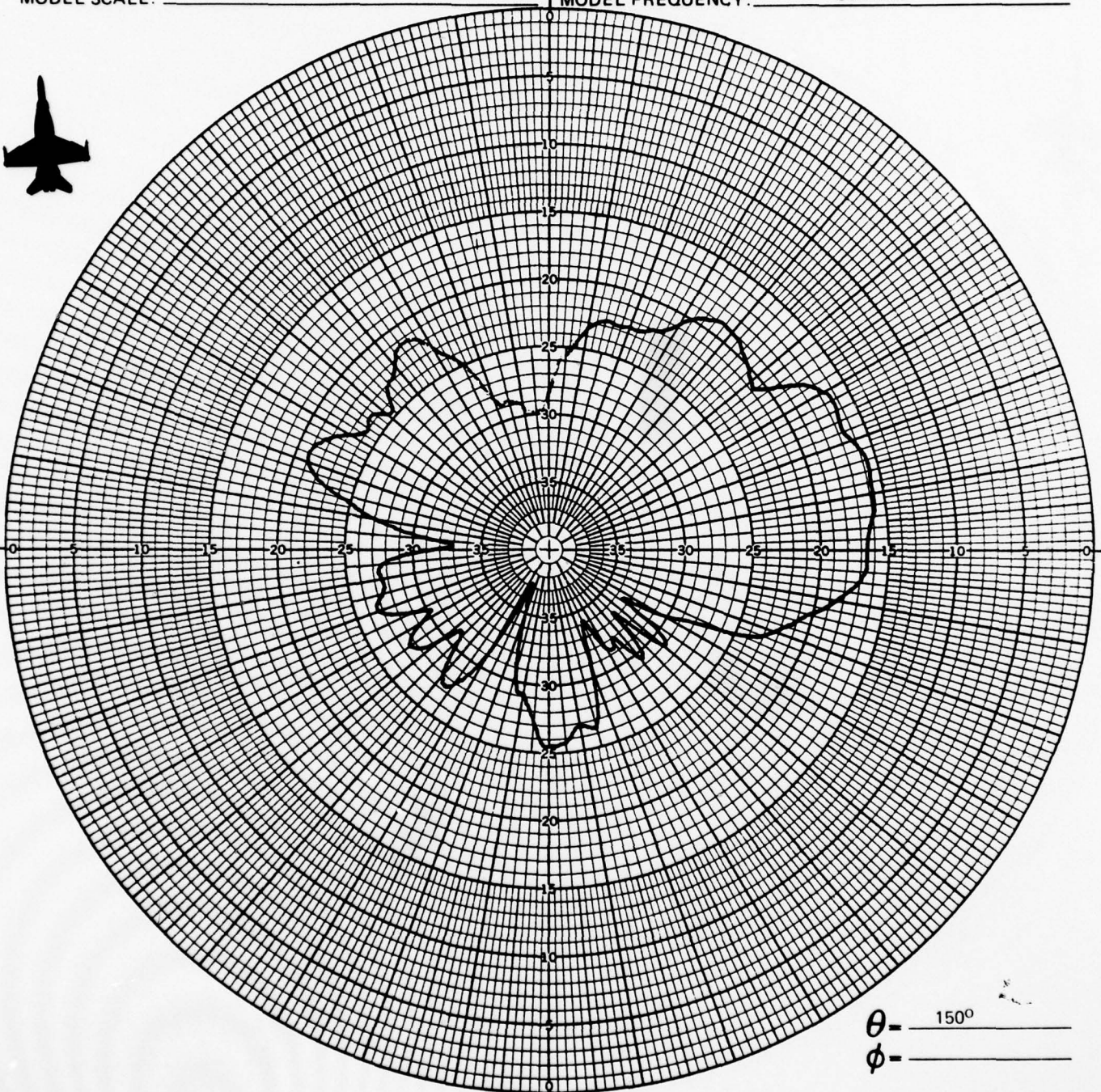
ANTENNA LOCATION: _____ FINCAP

MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)

FULL SCALE FREQUENCY: _____ 225 MHz

MODEL FREQUENCY: _____ 900 MHz



θ - 150°
 ϕ - _____

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

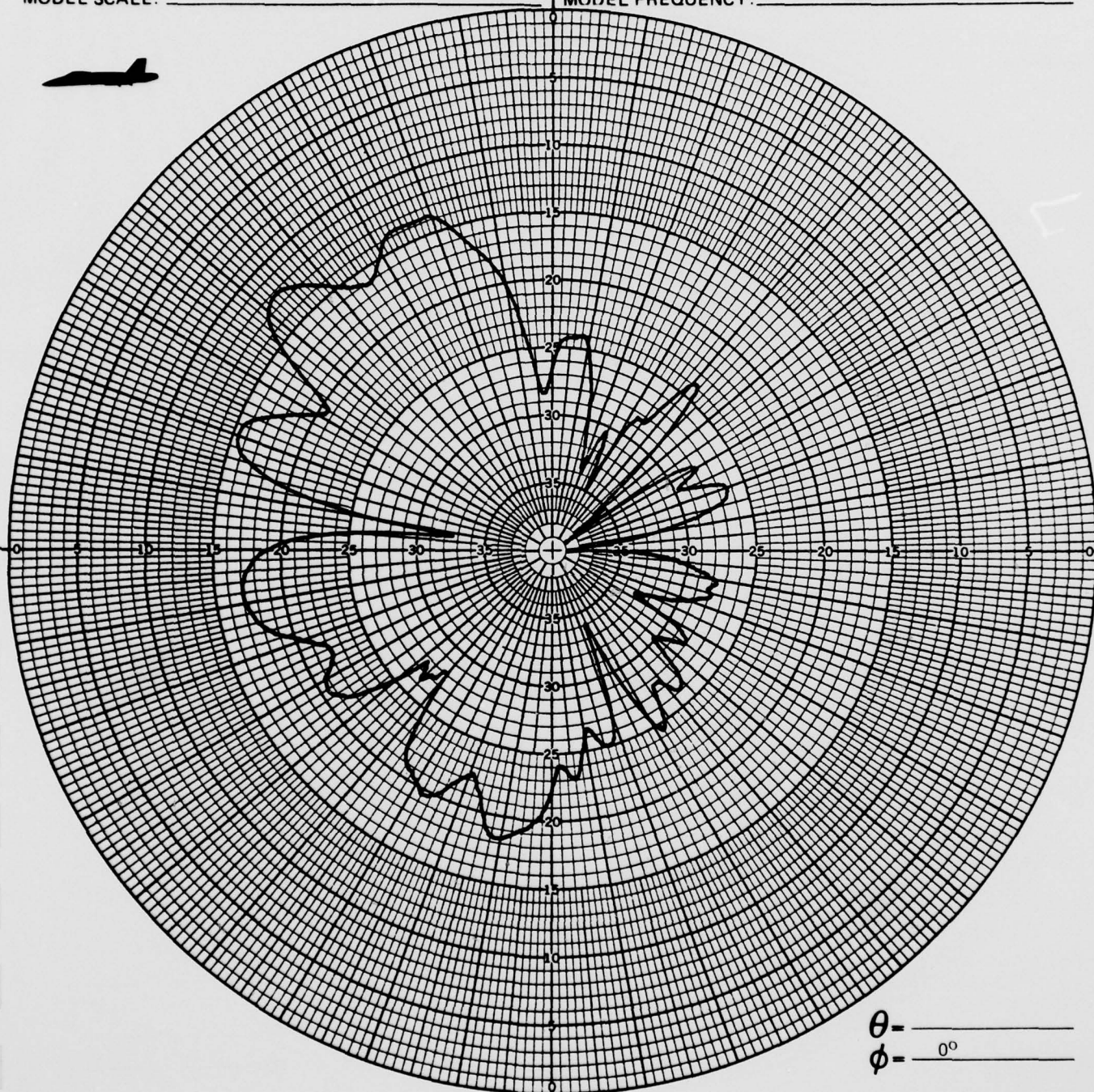
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: 4-28-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 225 MHz
MODEL FREQUENCY: _____ 900 MHz



θ - _____
 ϕ - _____ 0°

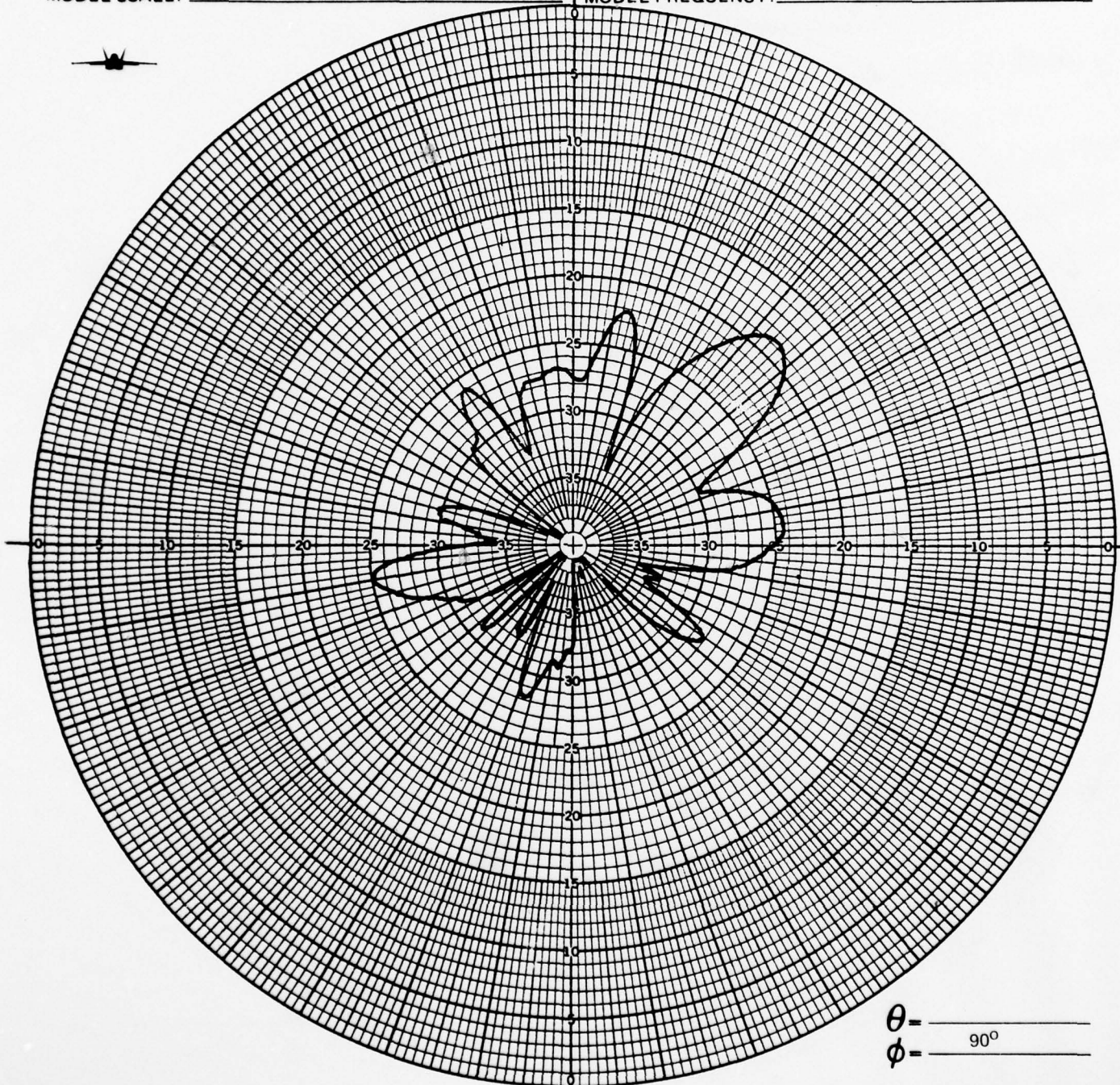
CONFIGURATION: _____ 30
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: E ϕ ☒ E θ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: _____ 4-28-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/4

TEST IDENT.: 703-174 (F-18)
FULL SCALE FREQUENCY: 225 MHz
MODEL FREQUENCY: 900 MHz



θ = _____
 ϕ = 90°

CONFIGURATION: 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: ☒ $E\phi$ ☐ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

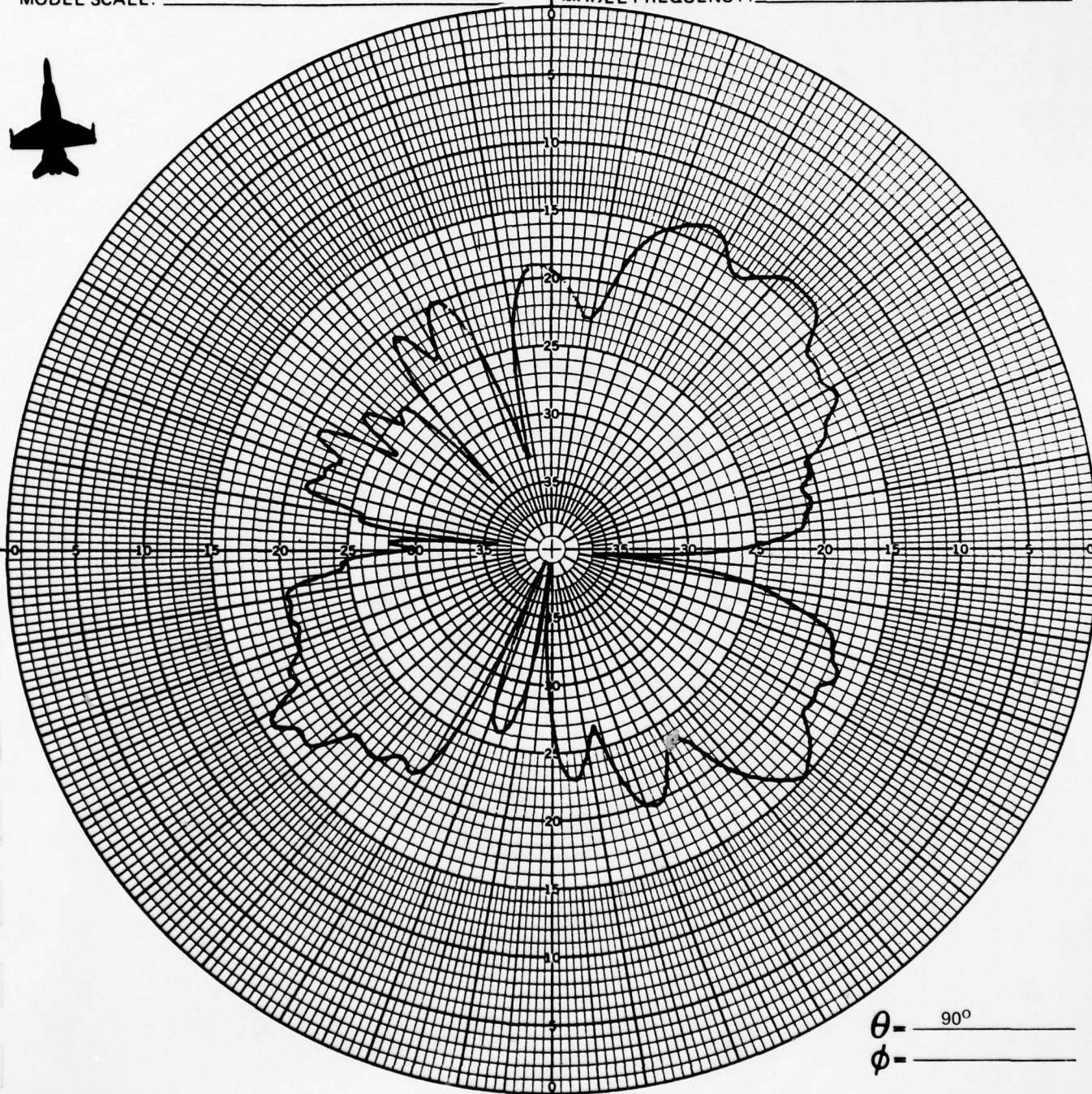
TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 4-28-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 225 MHz
MODEL FREQUENCY: _____ 900 MHz



θ - 90°
 ϕ - _____

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: 4-28-77

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MCDONNELL AIRCRAFT CO ST LOUIS MO
MULTIBAND ANTENNA SYSTEM FOR TACTICAL AIRCRAFT.(U)
SEP 77 F W VORTMEIER

F/G 17/2.1

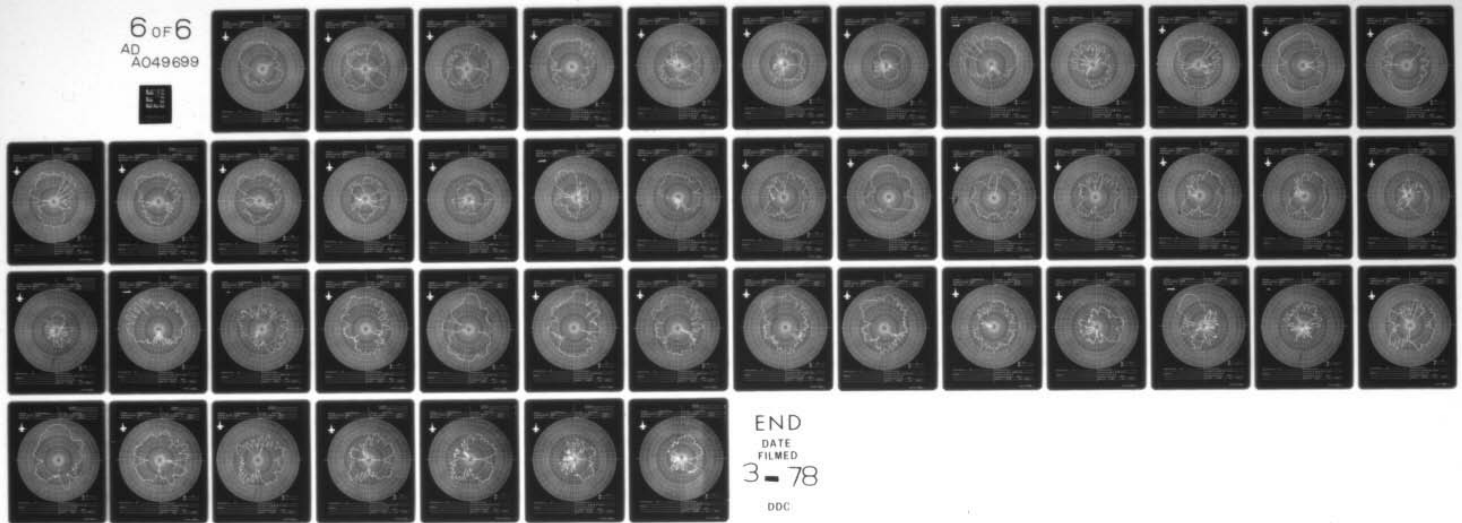
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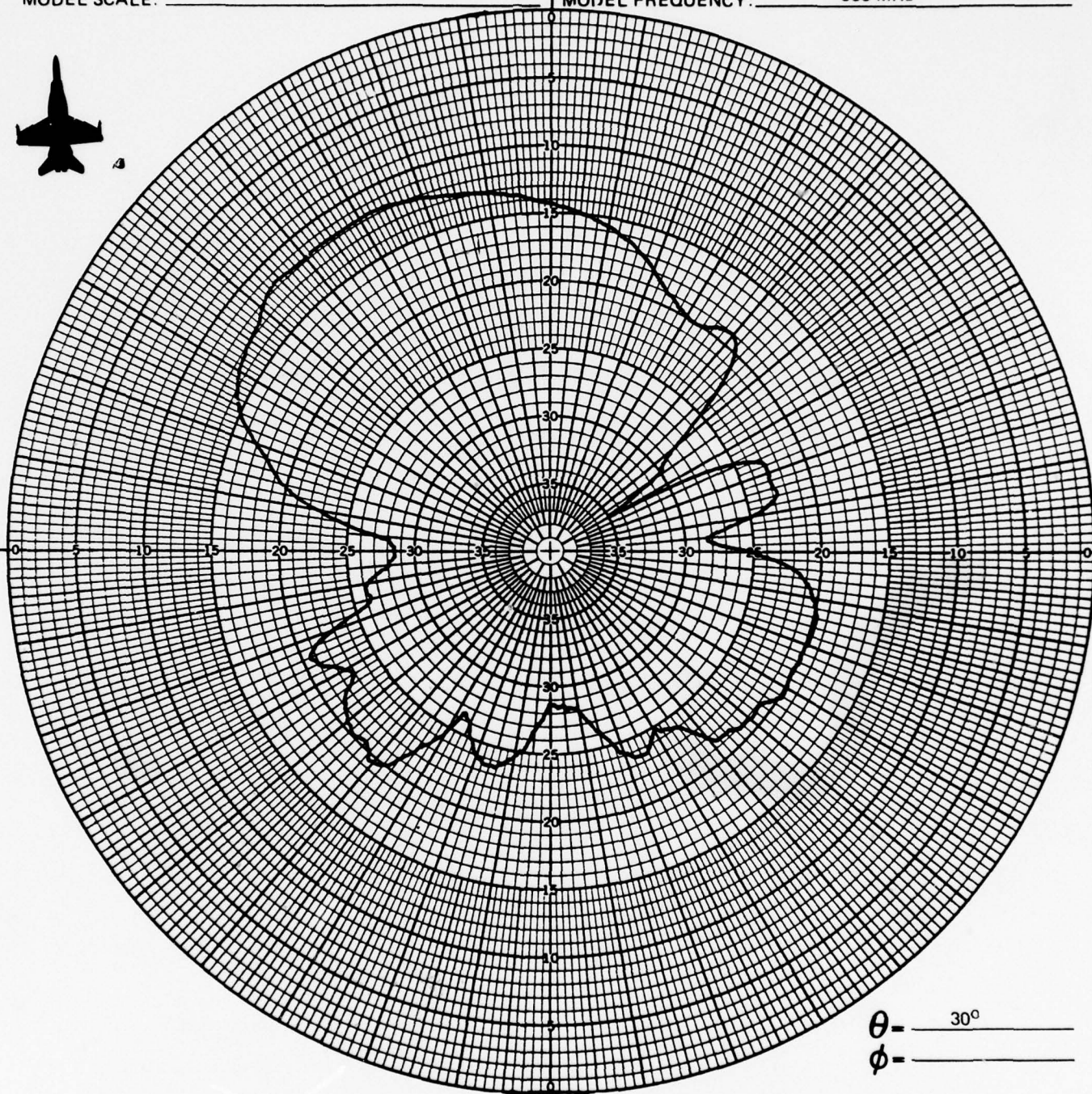
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DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 225 MHz
MODEL FREQUENCY: _____ 900 MHz



θ - 30°
 ϕ - _____

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: 4-28-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE

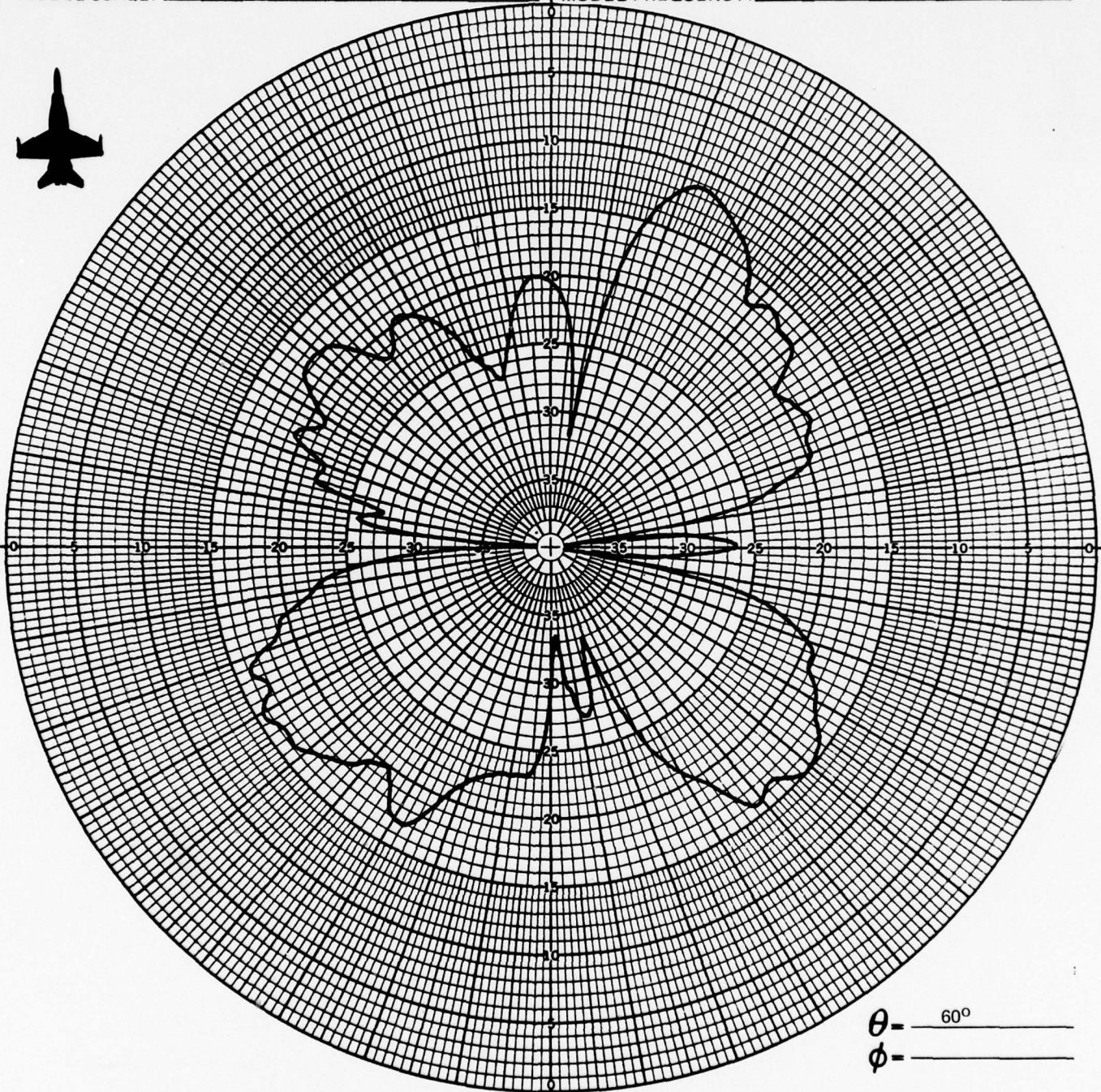
ANTENNA LOCATION: _____ FINCAP

MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)

FULL SCALE FREQUENCY: _____ 225 MHz

MODEL FREQUENCY: _____ 900 MHz



θ - 60°
 ϕ - _____

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: E ϕ ☒ E θ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

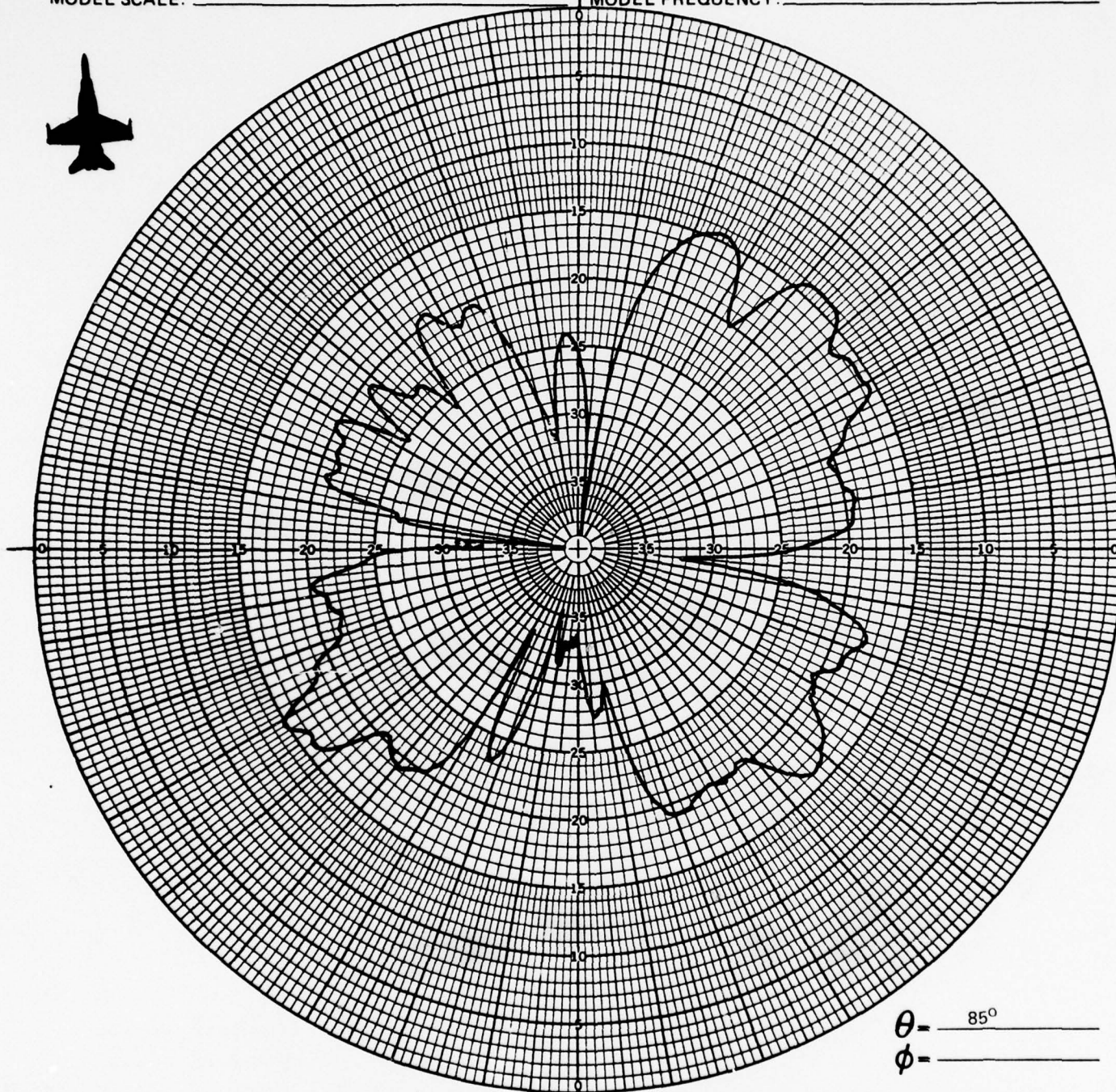
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 4-28-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/4

TEST IDENT.: 703-174 (F-18)
FULL SCALE FREQUENCY: 225 MHz
MODEL FREQUENCY: 900 MHz



θ - 85°
 ϕ - _____

CONFIGURATION: 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: ☐ $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 4-28-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE

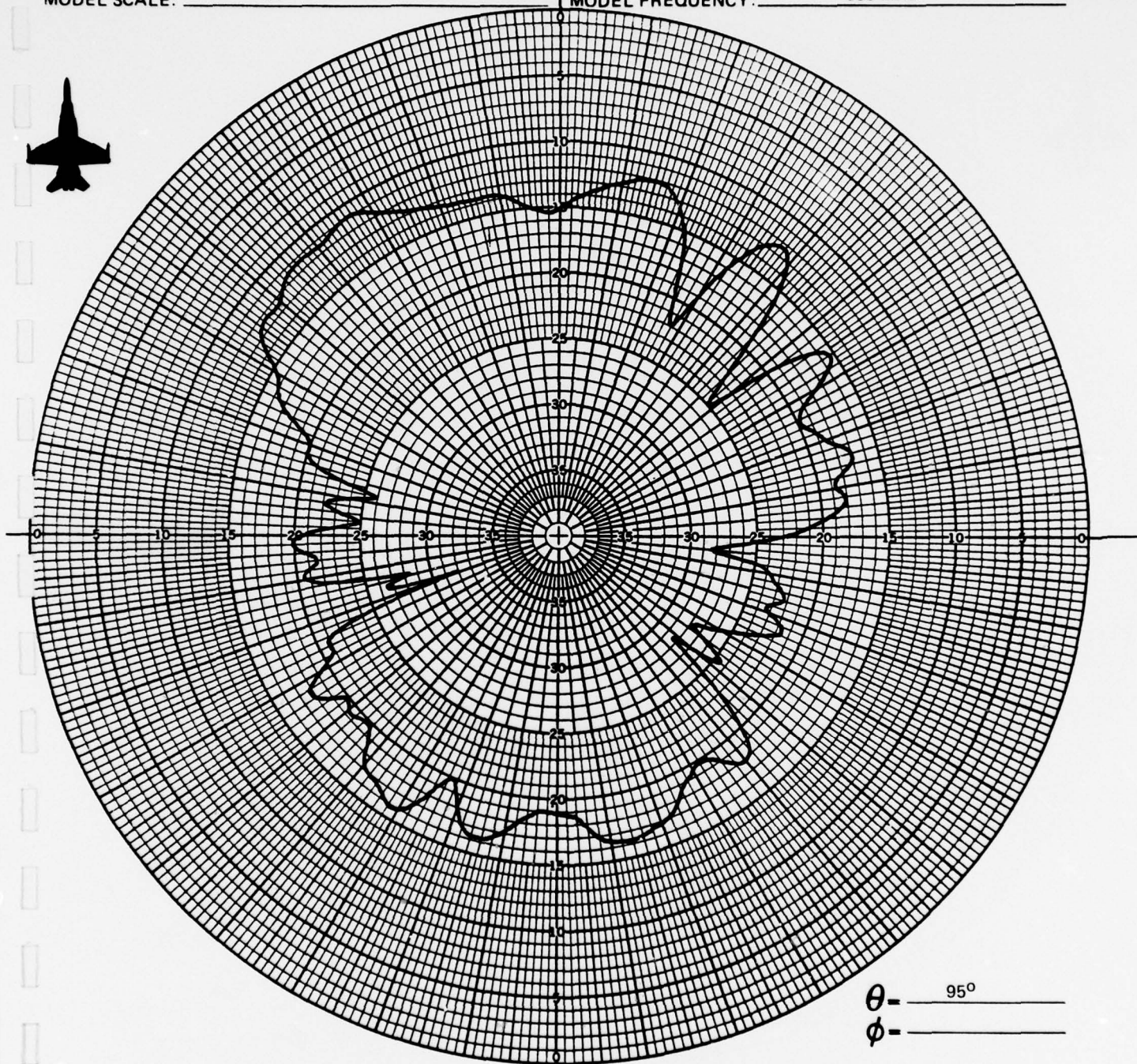
ANTENNA LOCATION: _____ FINCAP

MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)

FULL SCALE FREQUENCY: _____ 225 MHz

MODEL FREQUENCY: _____ 900 MHz



θ - 95°
 ϕ - _____

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: E ☒ ϕ ☐ E θ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

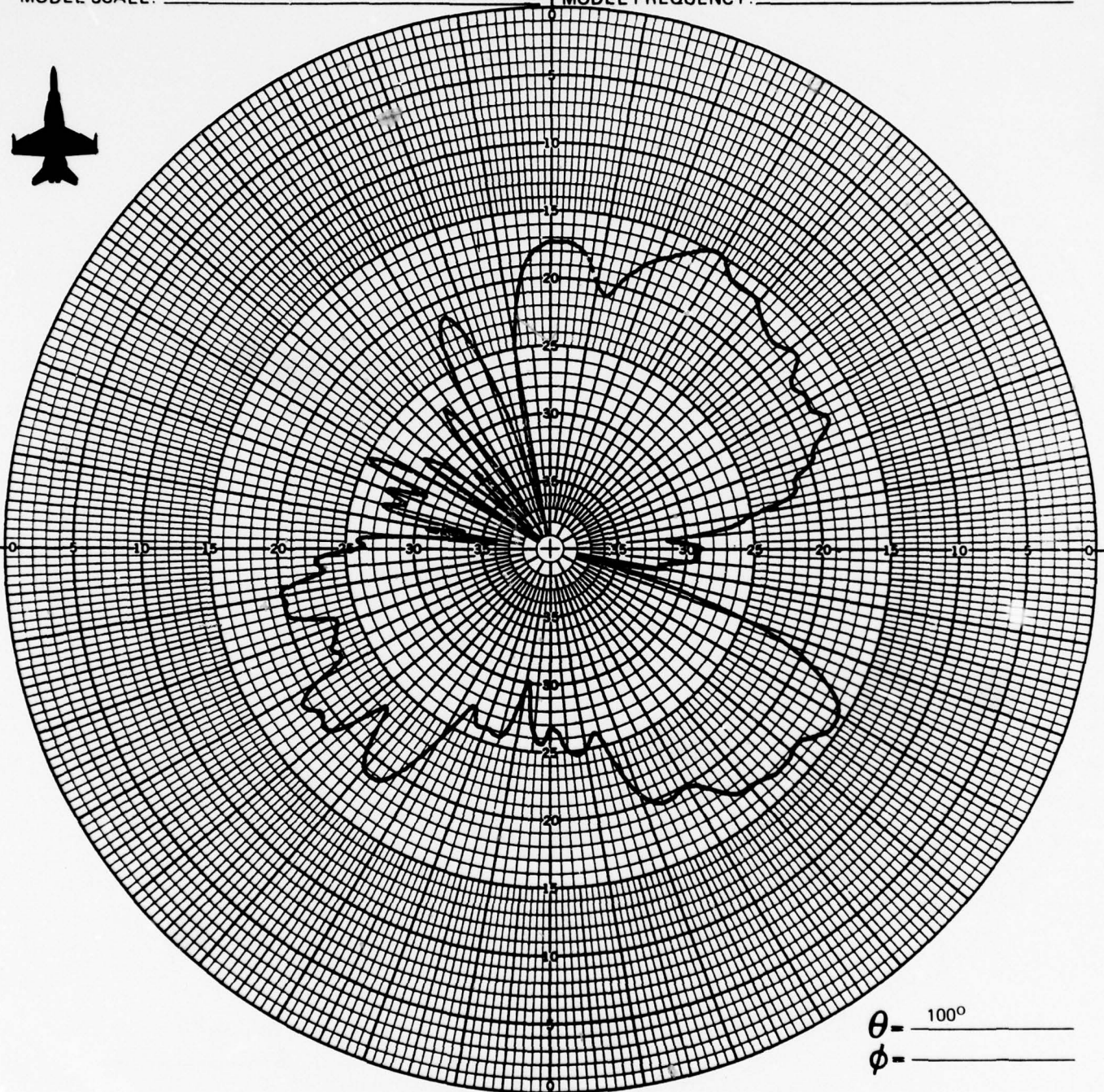
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: 4-28-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 225 MHz
MODEL FREQUENCY: _____ 900 MHz



θ - 100°
 ϕ - _____

CONFIGURATION: _____ 30

REMARKS _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

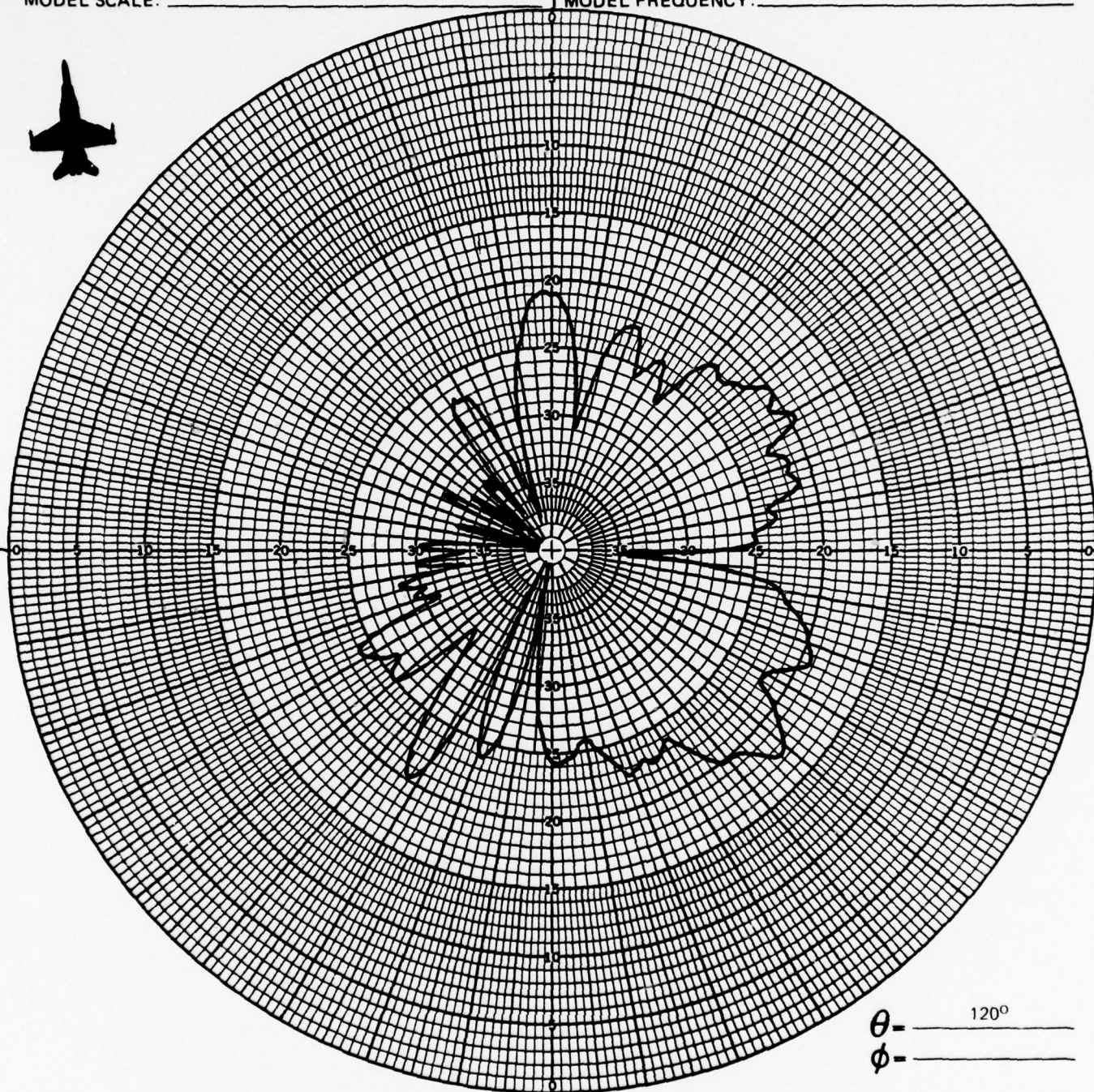
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: 4-28-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/4

TEST IDENT.: 703-174 (F-18)
FULL SCALE FREQUENCY: 225 MHz
MODEL FREQUENCY: 900 MHz



θ - 120°
 ϕ - _____

CONFIGURATION: 30

INTEGRATOR COUNT: _____

REMARKS: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

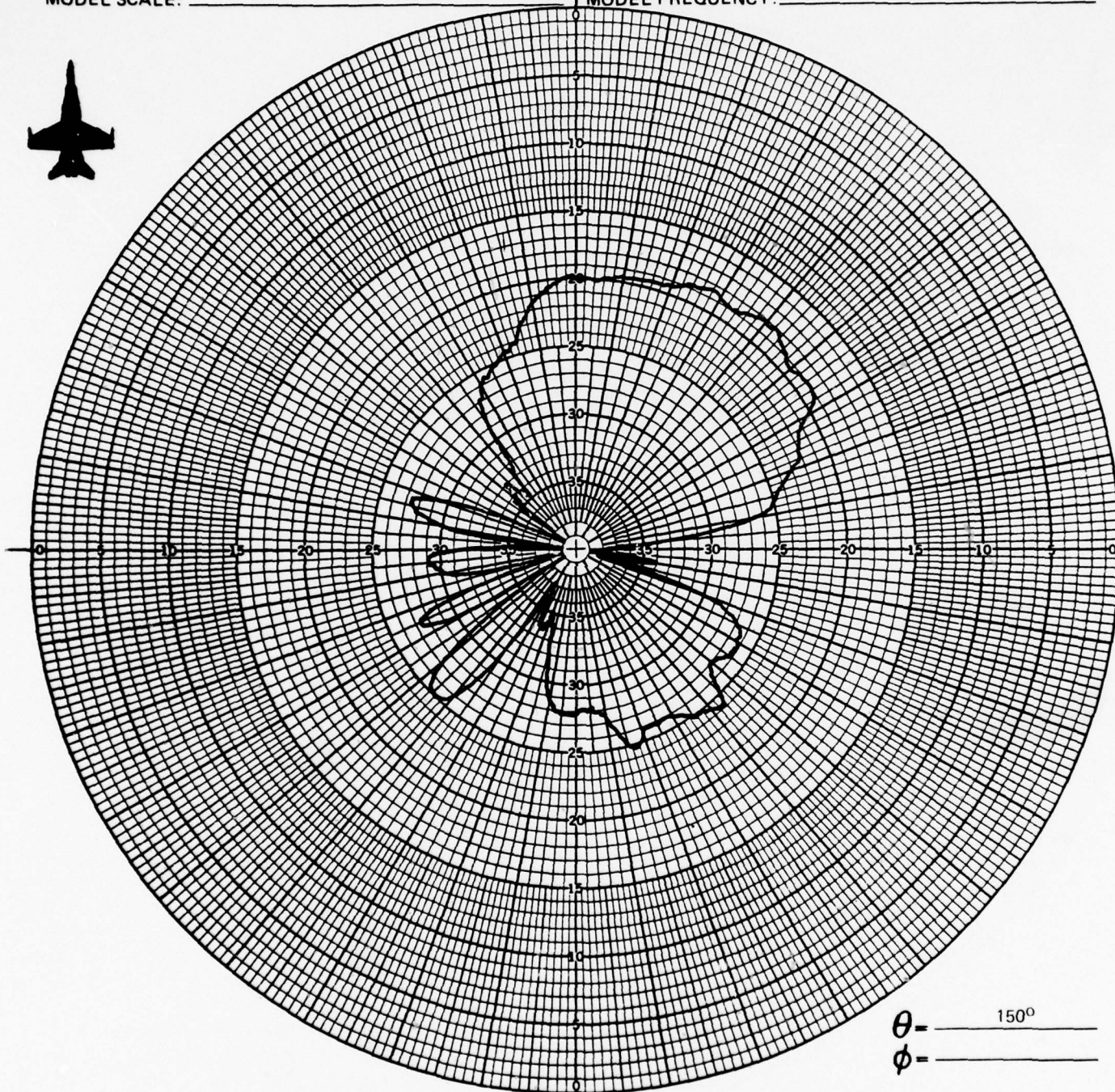
TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 4-28-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/4

TEST IDENT.: 703-174 (F-18)
FULL SCALE FREQUENCY: 225 MHz
MODEL FREQUENCY: 900 MHz



θ - 150°
 ϕ - _____

CONFIGURATION: 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

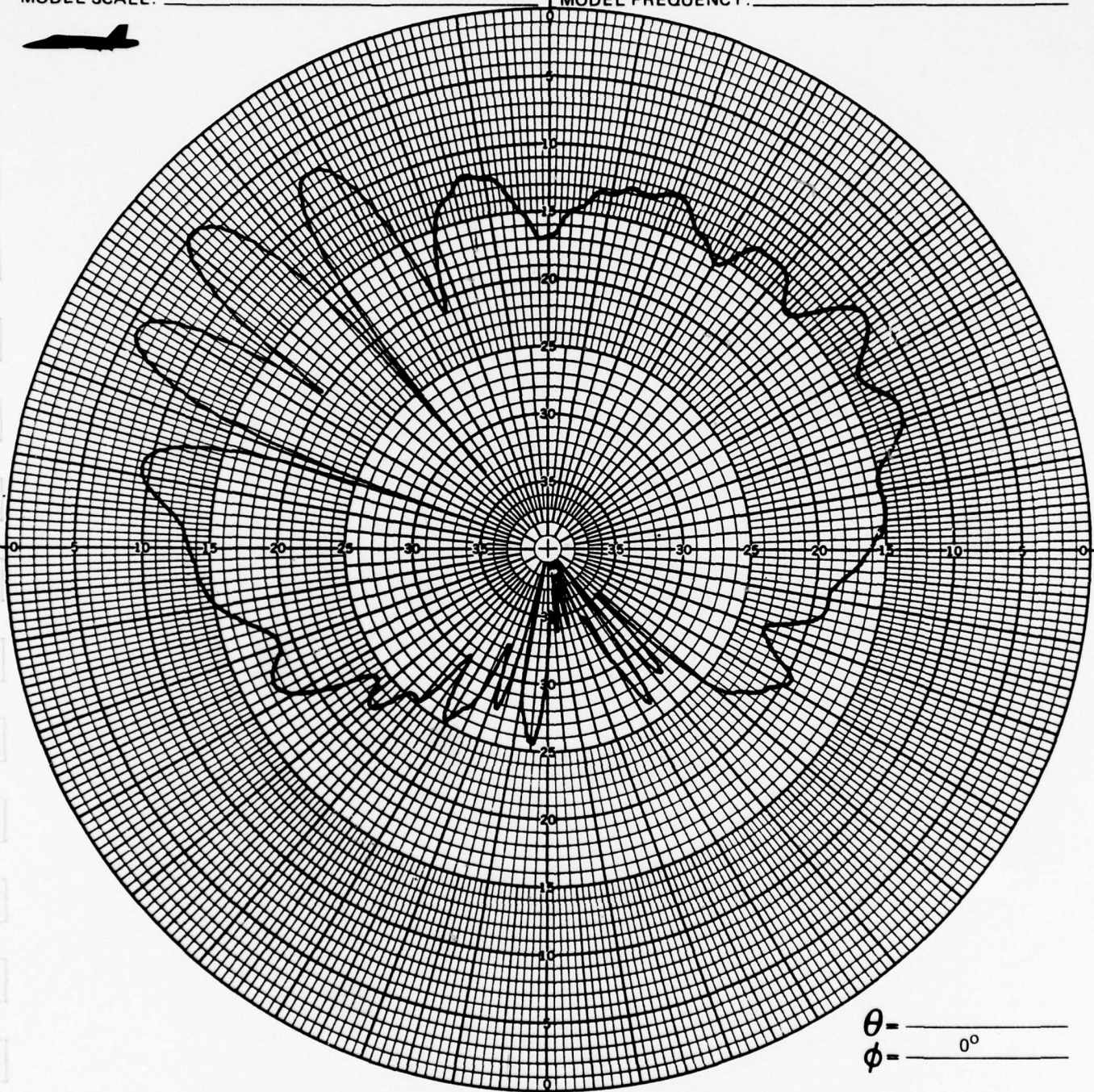
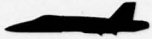
TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 4-28-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/4

TEST IDENT.: 703-174(F-18)
FULL SCALE FREQUENCY: 325 MHz
MODEL FREQUENCY: 1300 MHz



θ - _____
 ϕ - 0°

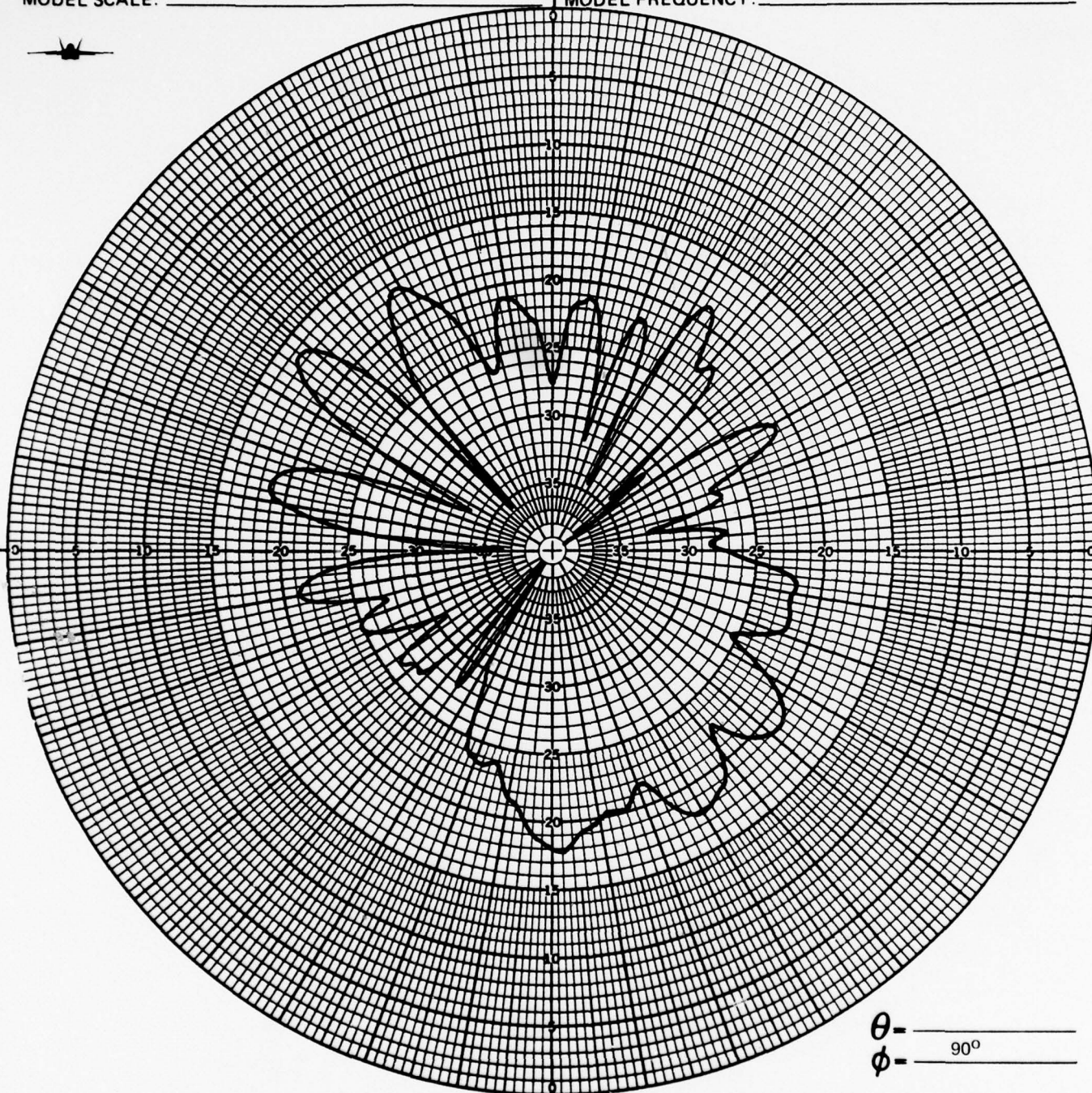
CONFIGURATION: 30
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: 285 FT
OBSERVER: PN, BM DATE: 4-28-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 325 MHz
MODEL FREQUENCY: _____ 1300 MHz



θ - _____
 ϕ - _____ 90°

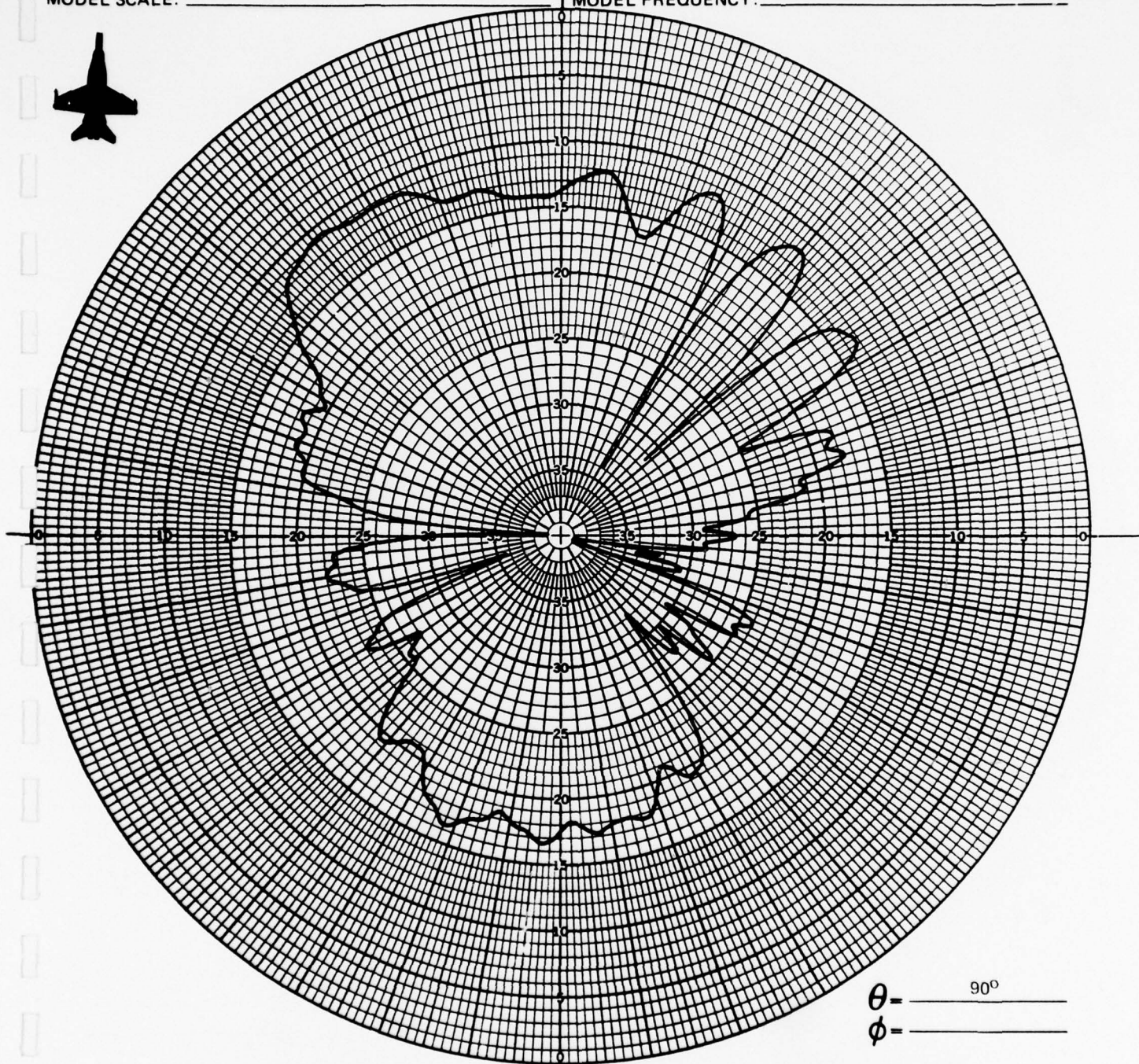
CONFIGURATION: _____ 30
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: _____ 4-28-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 325 MHz
MODEL FREQUENCY: _____ 1300 MHz



θ = _____ 90°
 ϕ = _____

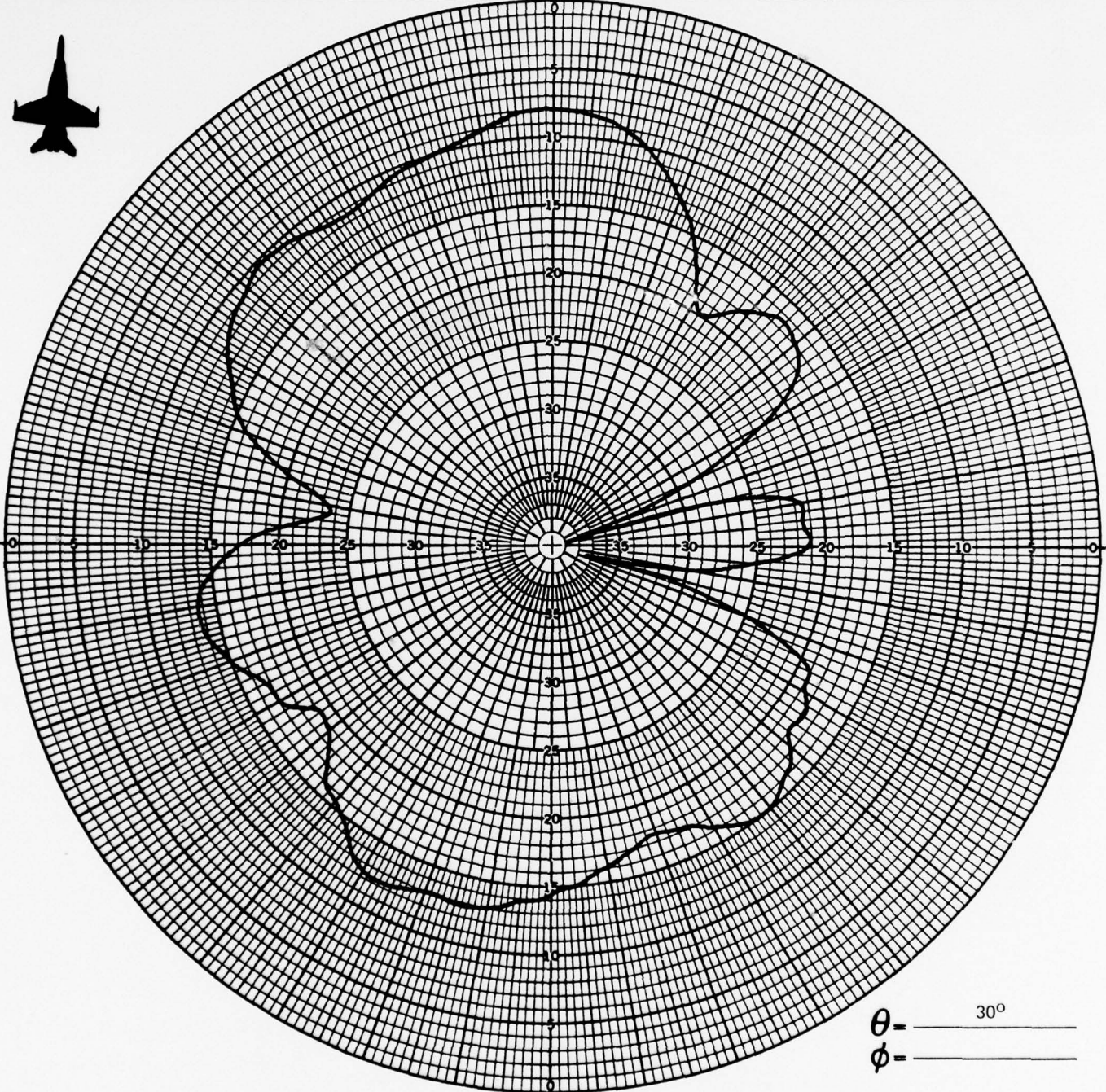
CONFIGURATION: _____ 30
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: E ϕ ☐ E θ ☒ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: _____ 4-28-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 325 MHz
MODEL FREQUENCY: _____ 1300 MHz



θ = _____ 30°
 ϕ = _____

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 4-28-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE

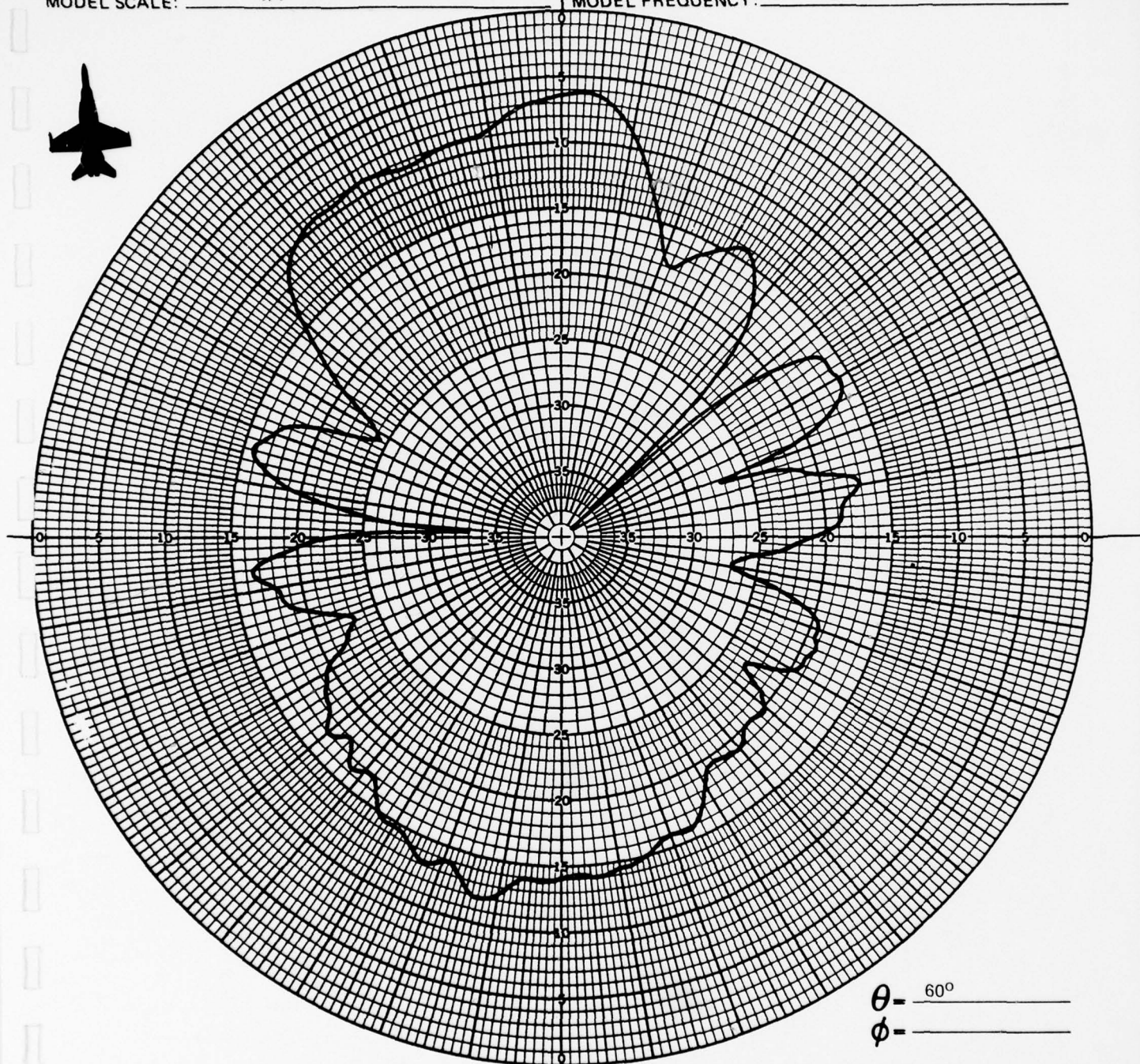
ANTENNA LOCATION: _____ FINCAP

MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)

FULL SCALE FREQUENCY: _____ 325 MHz

MODEL FREQUENCY: _____ 1300 MHz



θ - 60° _____
 ϕ - _____

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: 4-28-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE

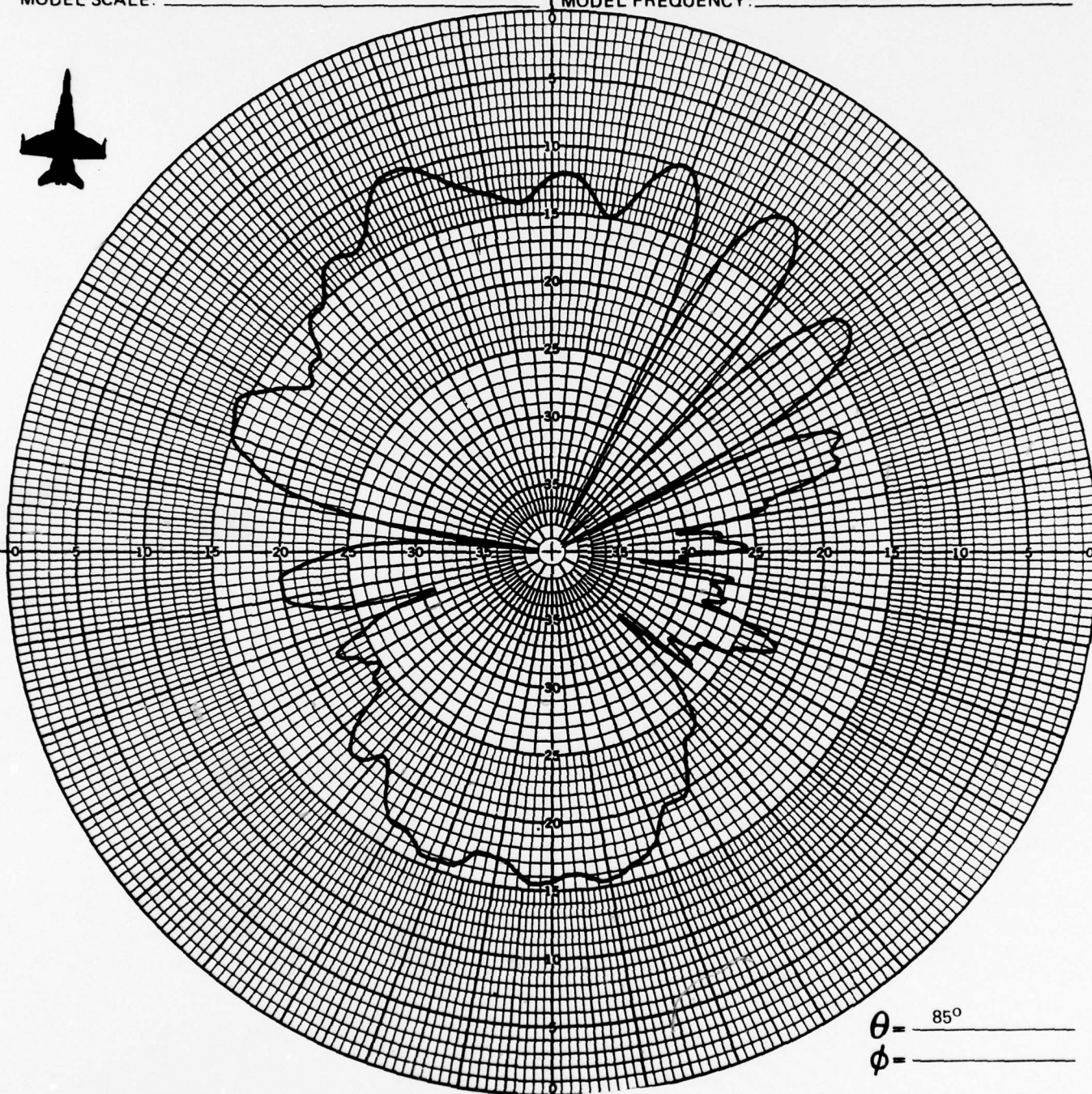
ANTENNA LOCATION: _____ FINCAP

MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)

FULL SCALE FREQUENCY: _____ 325 MHz

MODEL FREQUENCY: _____ 1300 MHz



θ = 85° _____
 ϕ = _____

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: E ϕ ☐ E θ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER _____ PN, BM _____ DATE: 4-28-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE

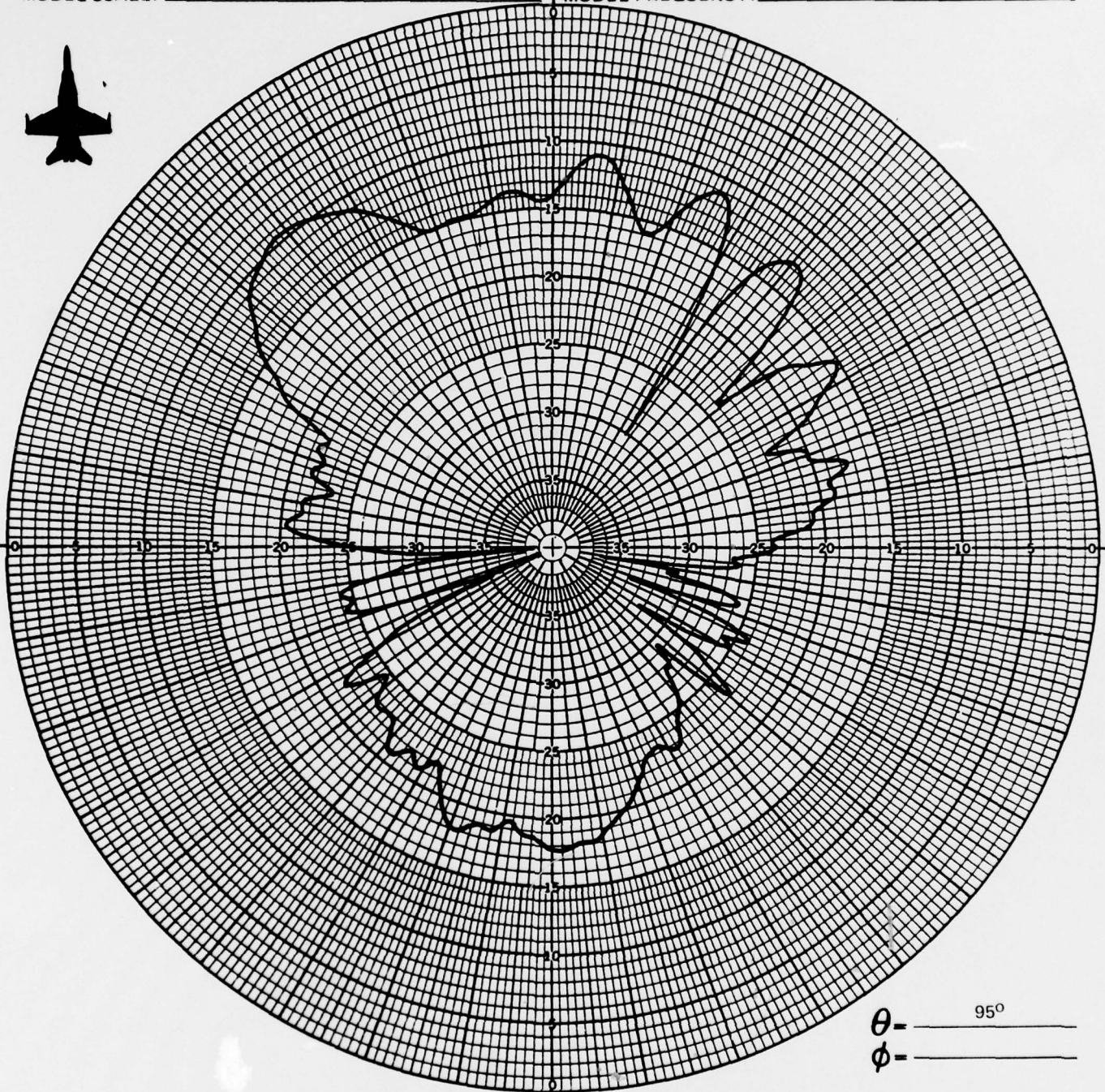
ANTENNA LOCATION: _____ FINCAP

MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)

FULL SCALE FREQUENCY: _____ 325 MHz

MODEL FREQUENCY: _____ 1300 MHz



θ - _____ 95°
 ϕ - _____

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

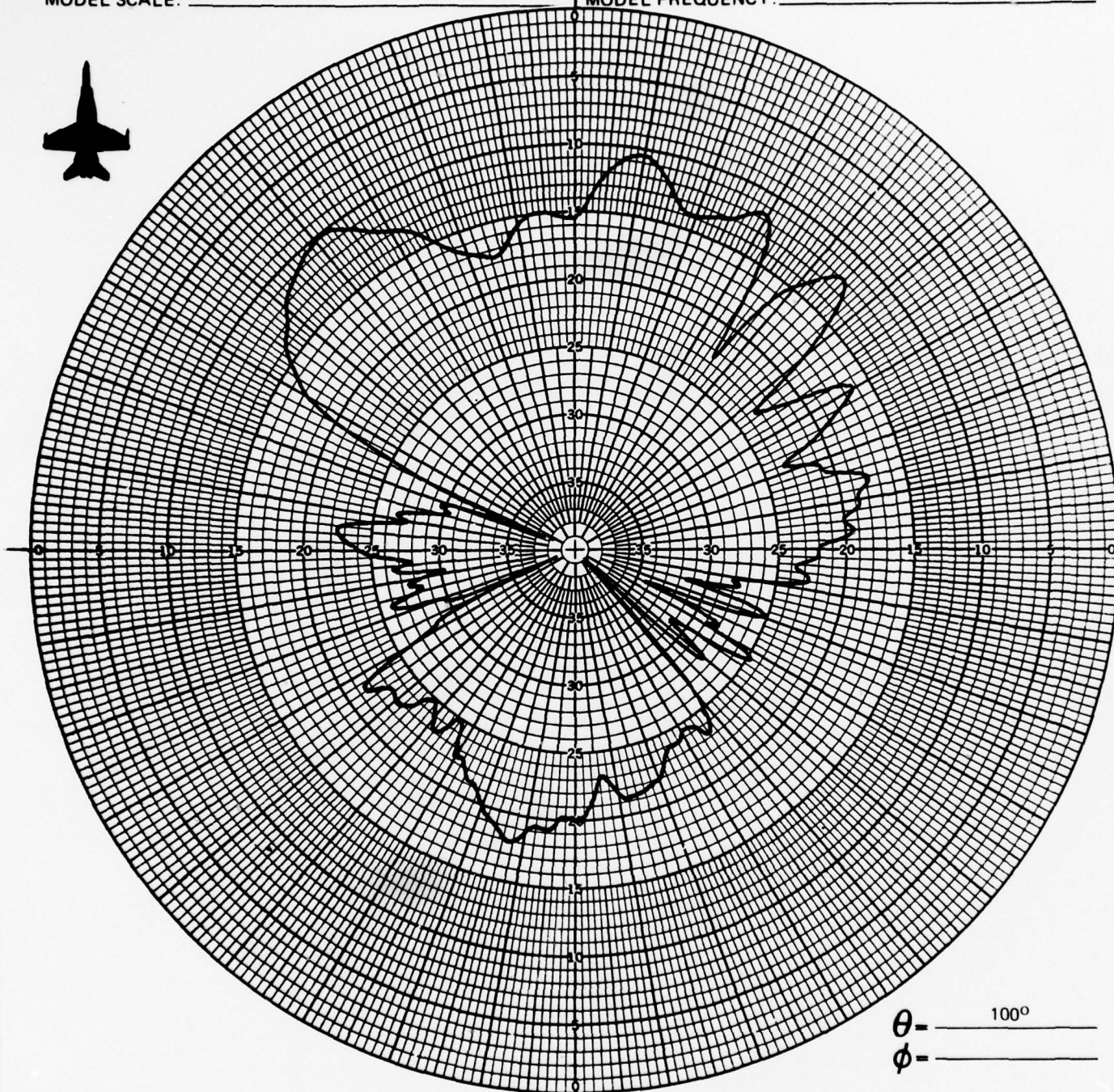
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 4-28-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 325 MHz
MODEL FREQUENCY: _____ 1300 MHz



θ = _____ 100°
 ϕ = _____

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

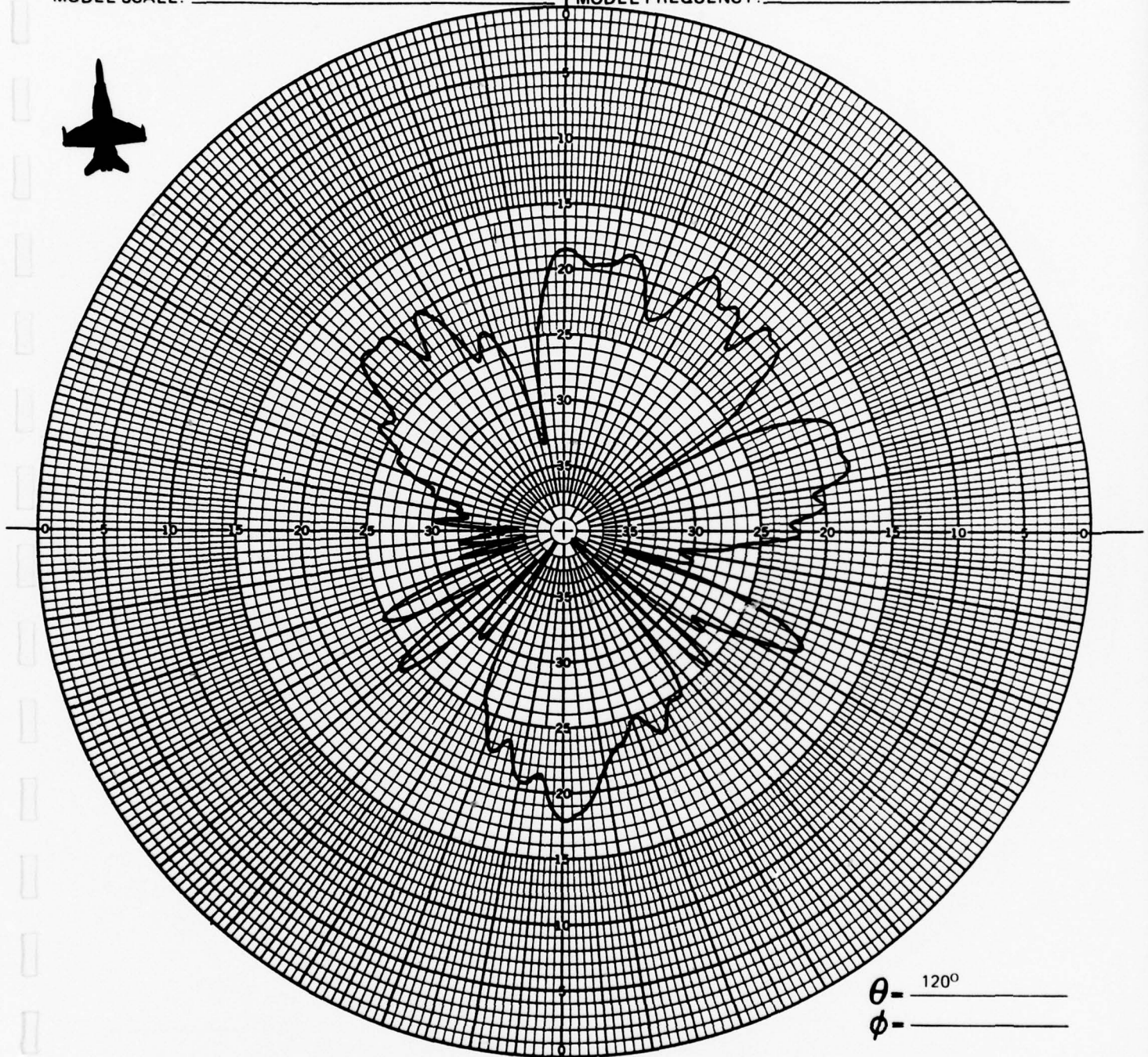
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 4-28-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 325 MHz
MODEL FREQUENCY: _____ 1300 MHz



θ - 120°
 ϕ - _____

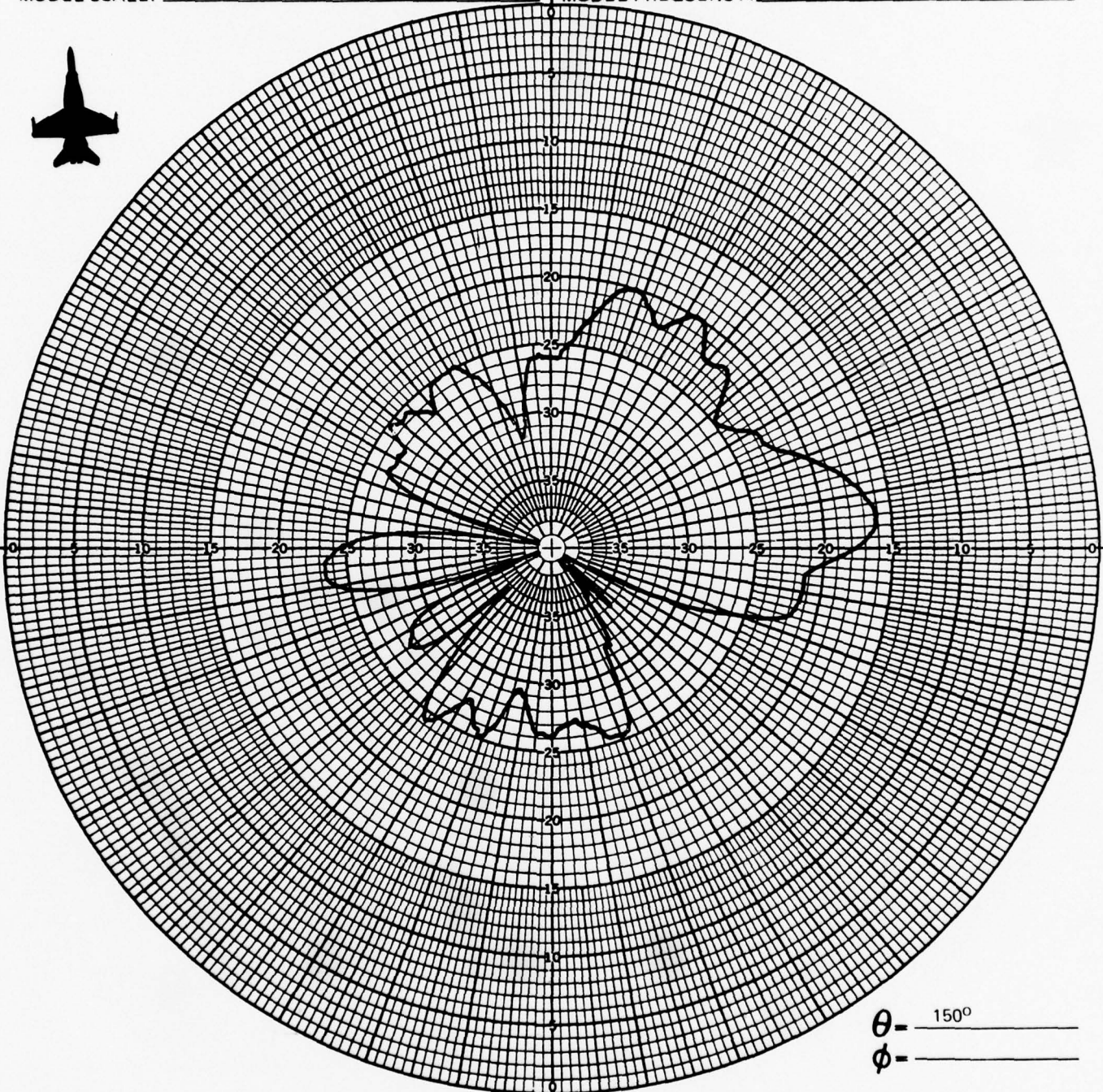
CONFIGURATION: _____ 30
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☐ $E\theta$ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: 4-28-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/4

TEST IDENT.: 703-174 (F-18)
FULL SCALE FREQUENCY: 325 MHz
MODEL FREQUENCY: 1300 MHz



θ - 150°
 ϕ - _____

CONFIGURATION: 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 4-28-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE

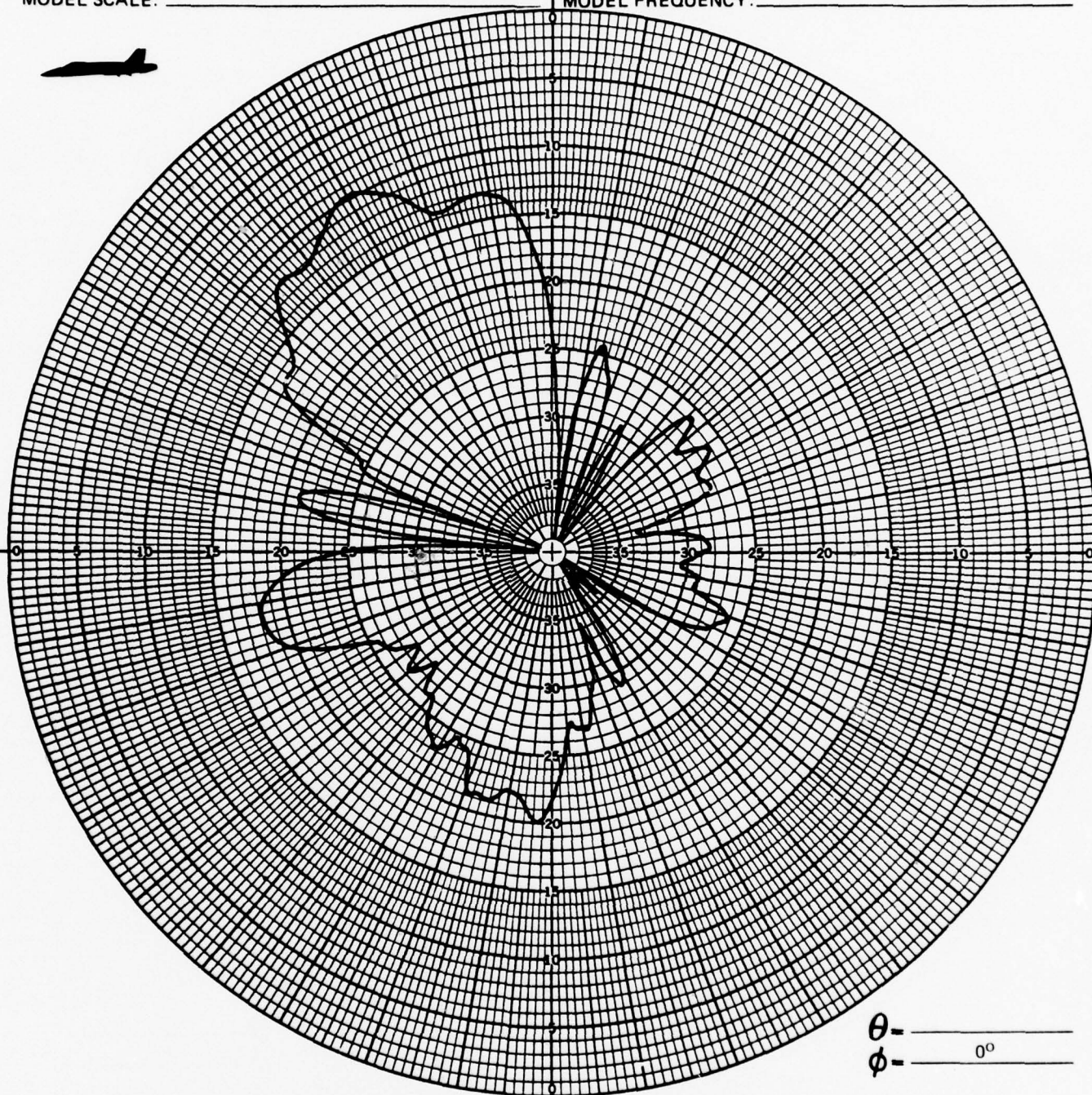
ANTENNA LOCATION: _____ FINCAP

MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)

FULL SCALE FREQUENCY: _____ 325 MHz

MODEL FREQUENCY: _____ 1300 MHz



θ - _____
 ϕ - _____ 0°

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: ☒ E ϕ ☐ E θ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

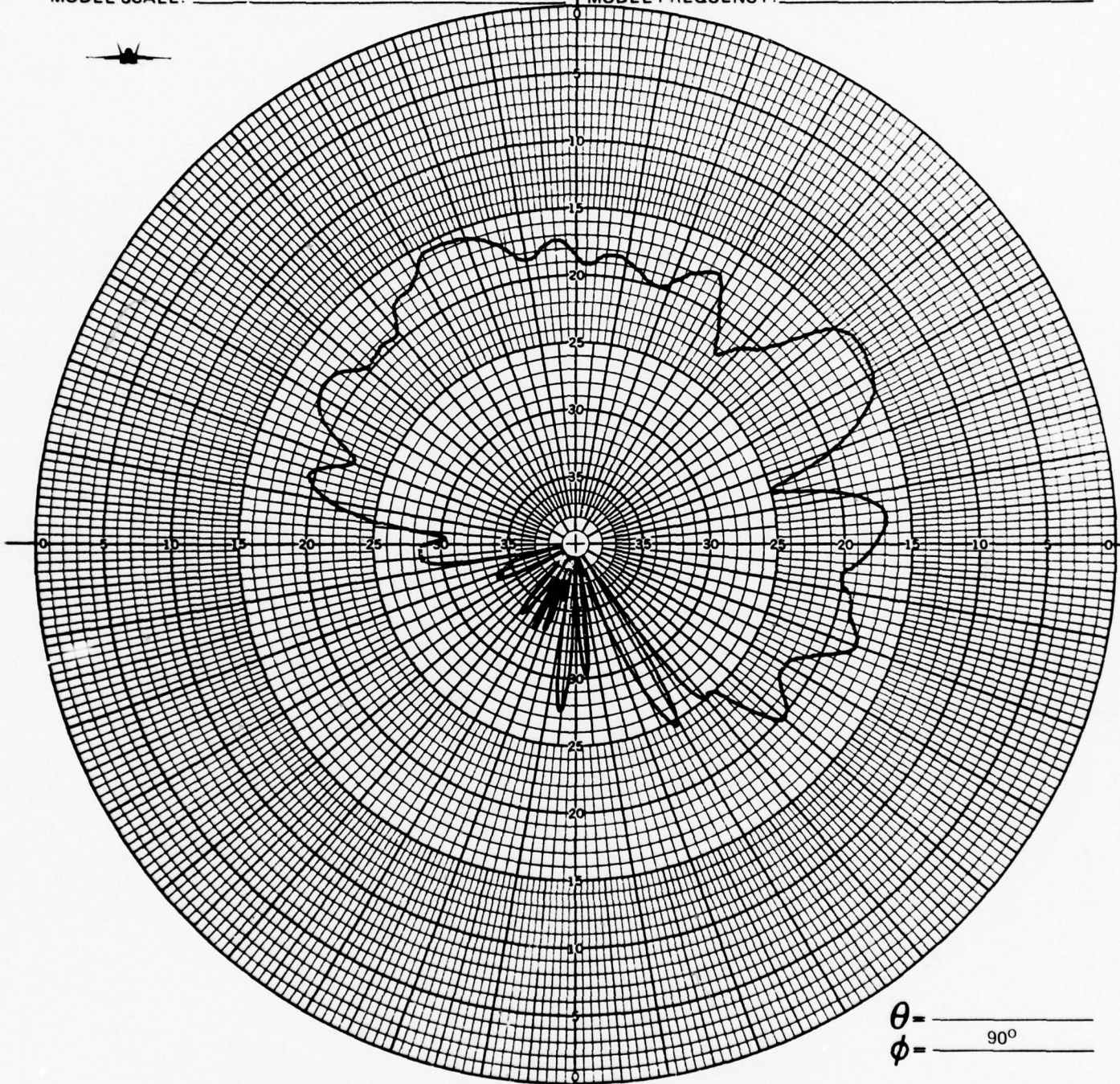
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 4-28-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/4

TEST IDENT.: 703-174 (F-18)
FULL SCALE FREQUENCY: 325 MHz
MODEL FREQUENCY: 1300 MHz



CONFIGURATION: 30
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: 285 FT
OBSERVER: PN, BM DATE: 4-28-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE

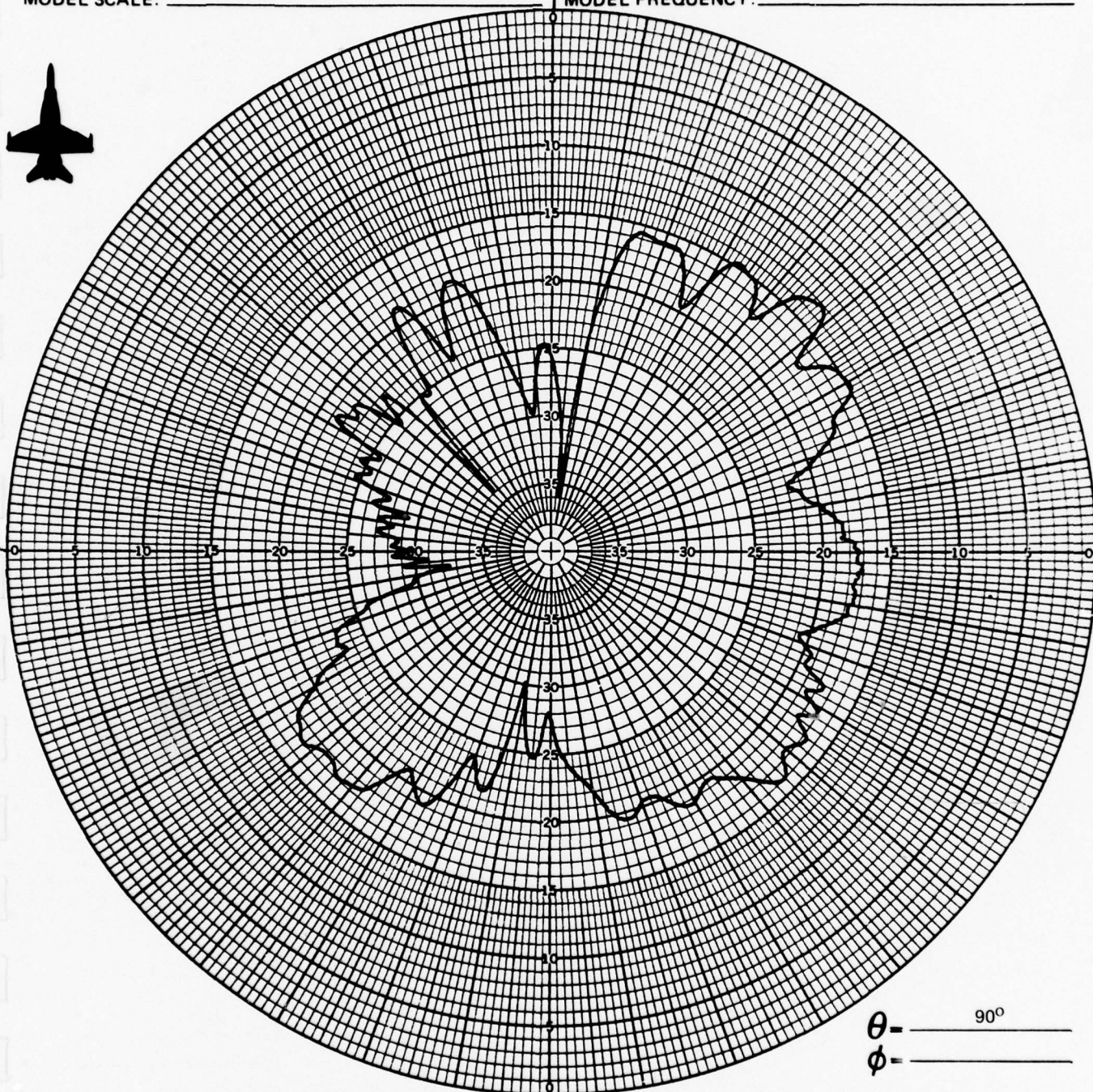
ANTENNA LOCATION: _____ FINCAP

MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)

FULL SCALE FREQUENCY: _____ 325 MHz

MODEL FREQUENCY: _____ 1300 MHz



θ - _____ 90°
 ϕ - _____

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 4-28-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE

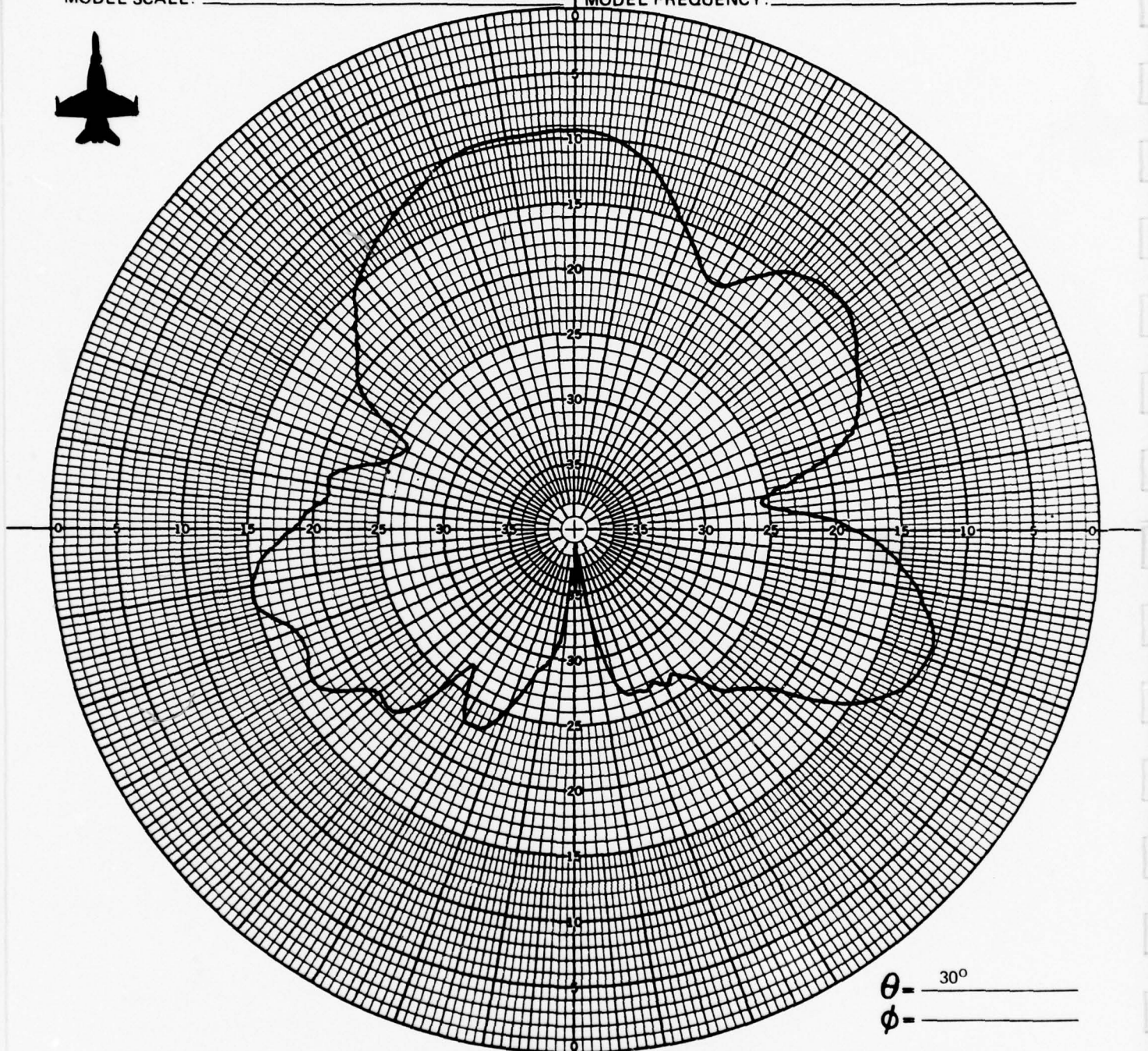
ANTENNA LOCATION: _____ FINCAP

MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)

FULL SCALE FREQUENCY: _____ 325 MHz

MODEL FREQUENCY: _____ 1300 MHz



θ - 30°
 ϕ - _____

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

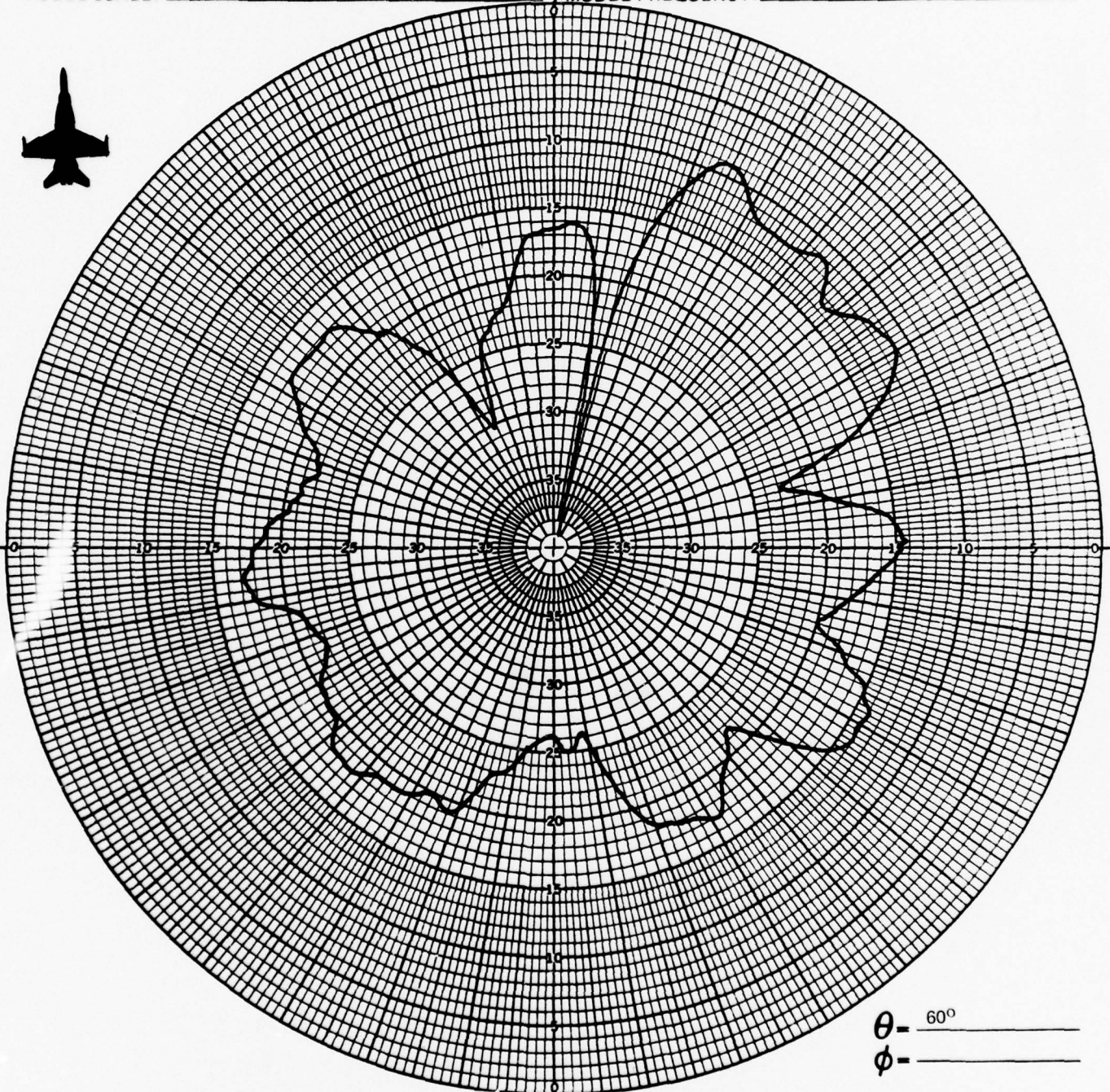
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: 4-28-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 325 MHz
MODEL FREQUENCY: _____ 1300 MHz



θ - 60°
 ϕ - _____

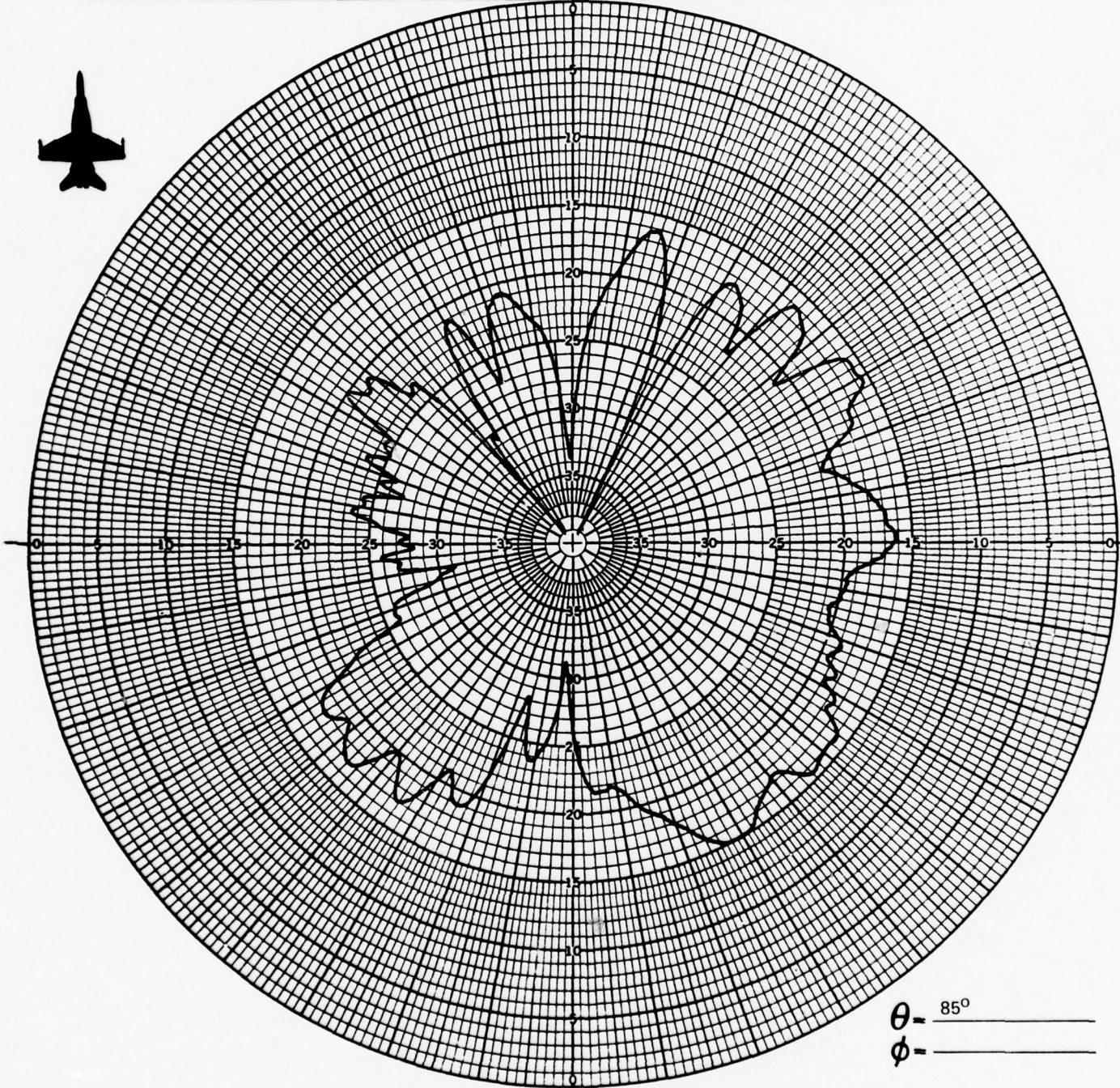
CONFIGURATION: _____ 30
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: E ☒ ϕ ☒ E θ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: 4-28-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/4

TEST IDENT.: 703-174 (F-18)
FULL SCALE FREQUENCY: 325 MHz
MODEL FREQUENCY: 1300 MHz



θ - 85°
 ϕ - _____

CONFIGURATION: 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: ☒ E ϕ ☒ E θ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

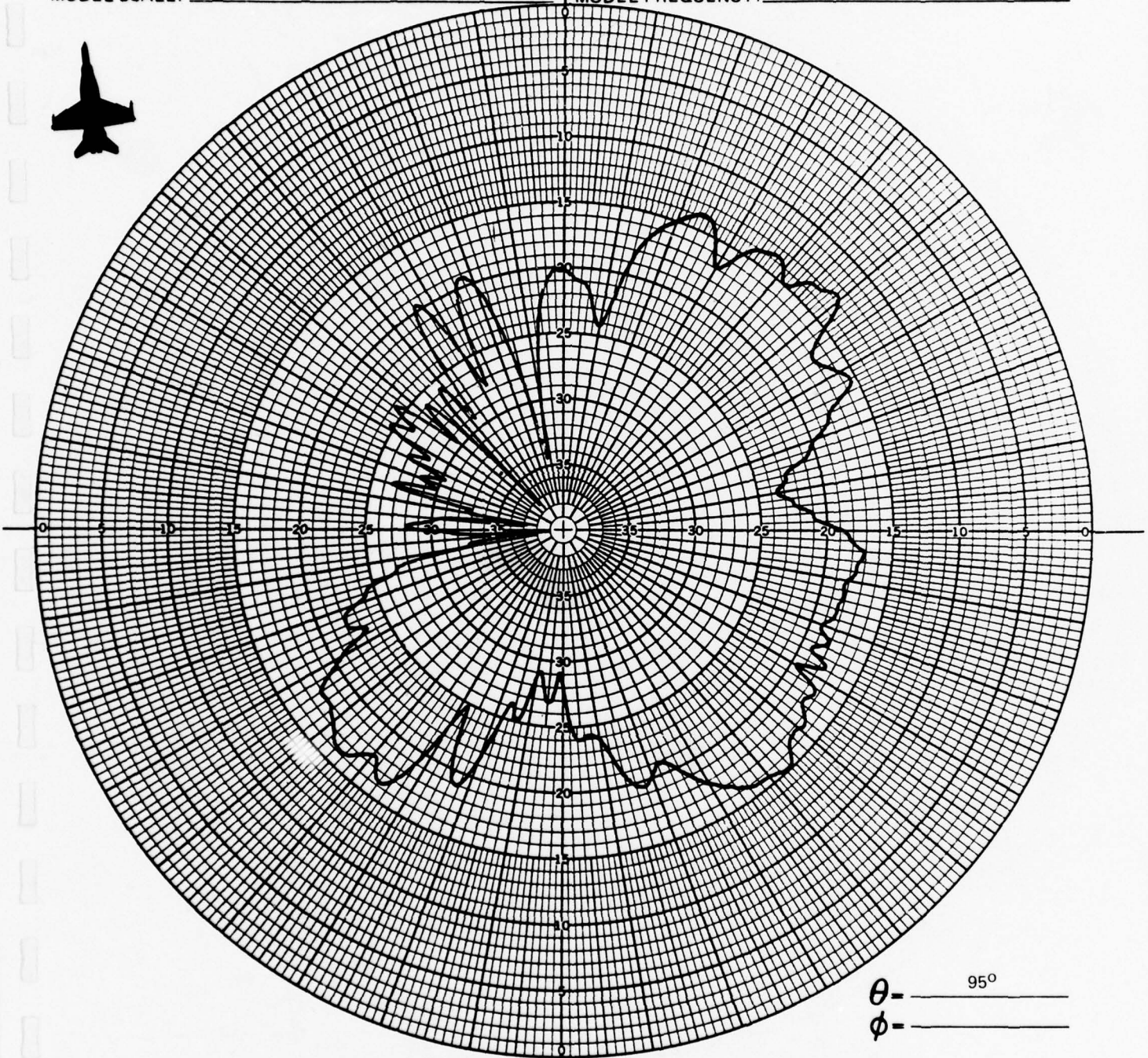
TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 4-28-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 325 MHz
MODEL FREQUENCY: _____ 1300 MHz



θ - _____ 95°
 ϕ - _____

CONFIGURATION: _____ 30
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: _____ 4-28-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE

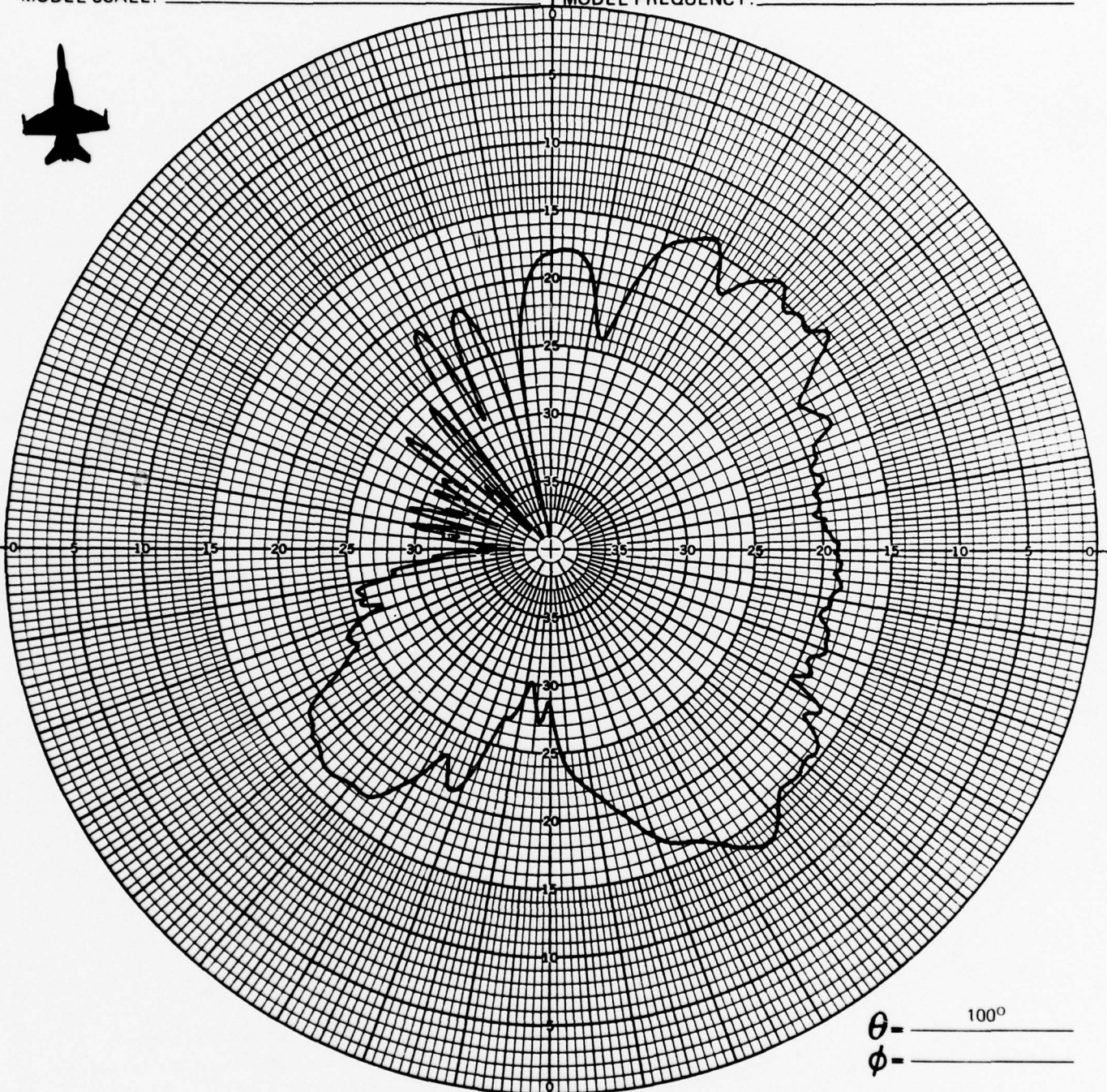
ANTENNA LOCATION: _____ FINCAP

MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)

FULL SCALE FREQUENCY: _____ 325 MHz

MODEL FREQUENCY: _____ 1300 MHz



θ - _____ 100°
 ϕ - _____

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 4-28-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE

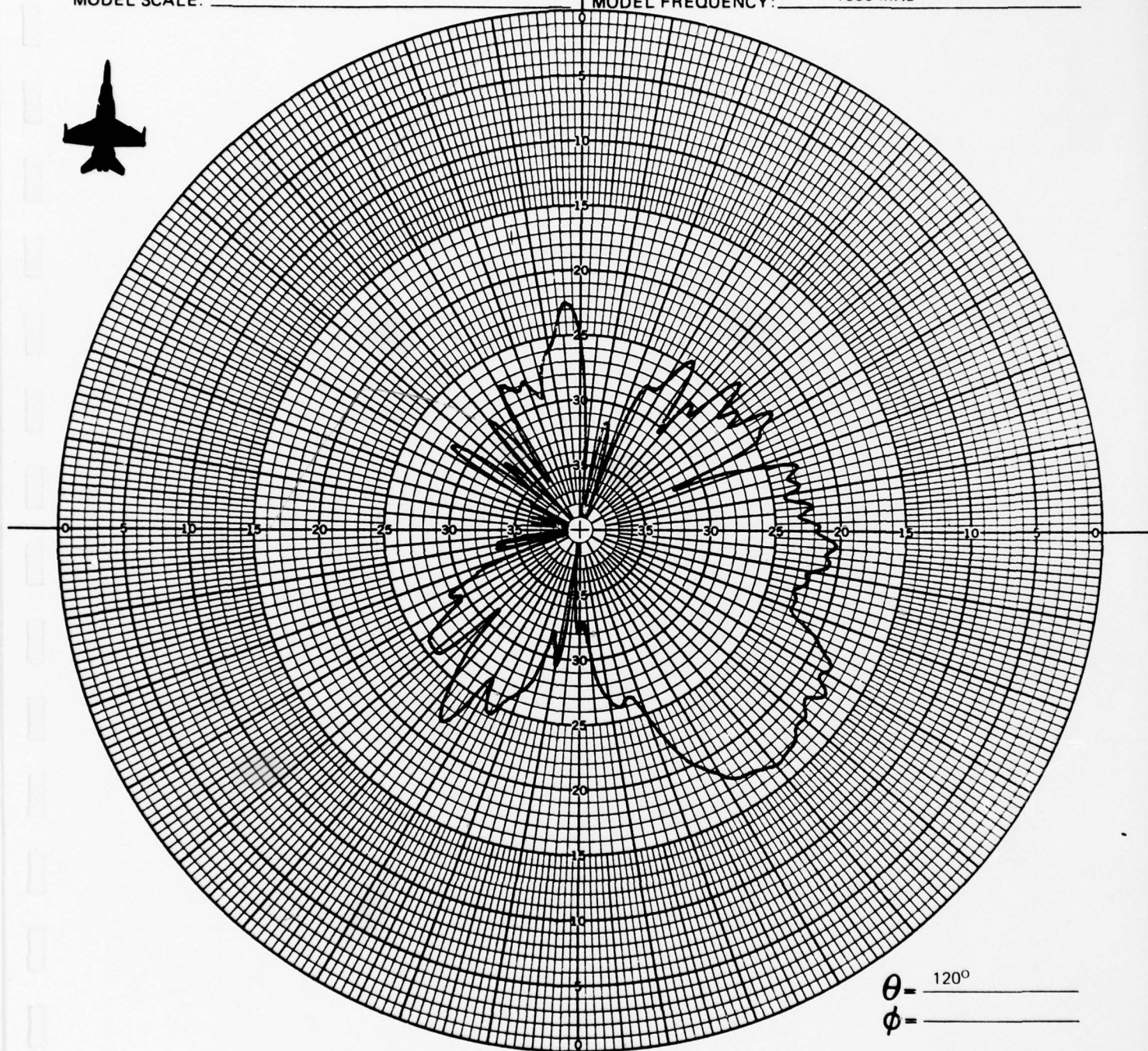
ANTENNA LOCATION: _____ FINCAP

MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)

FULL SCALE FREQUENCY: _____ 325 MHz

MODEL FREQUENCY: _____ 1300 MHz



θ - 120°
 ϕ - _____

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

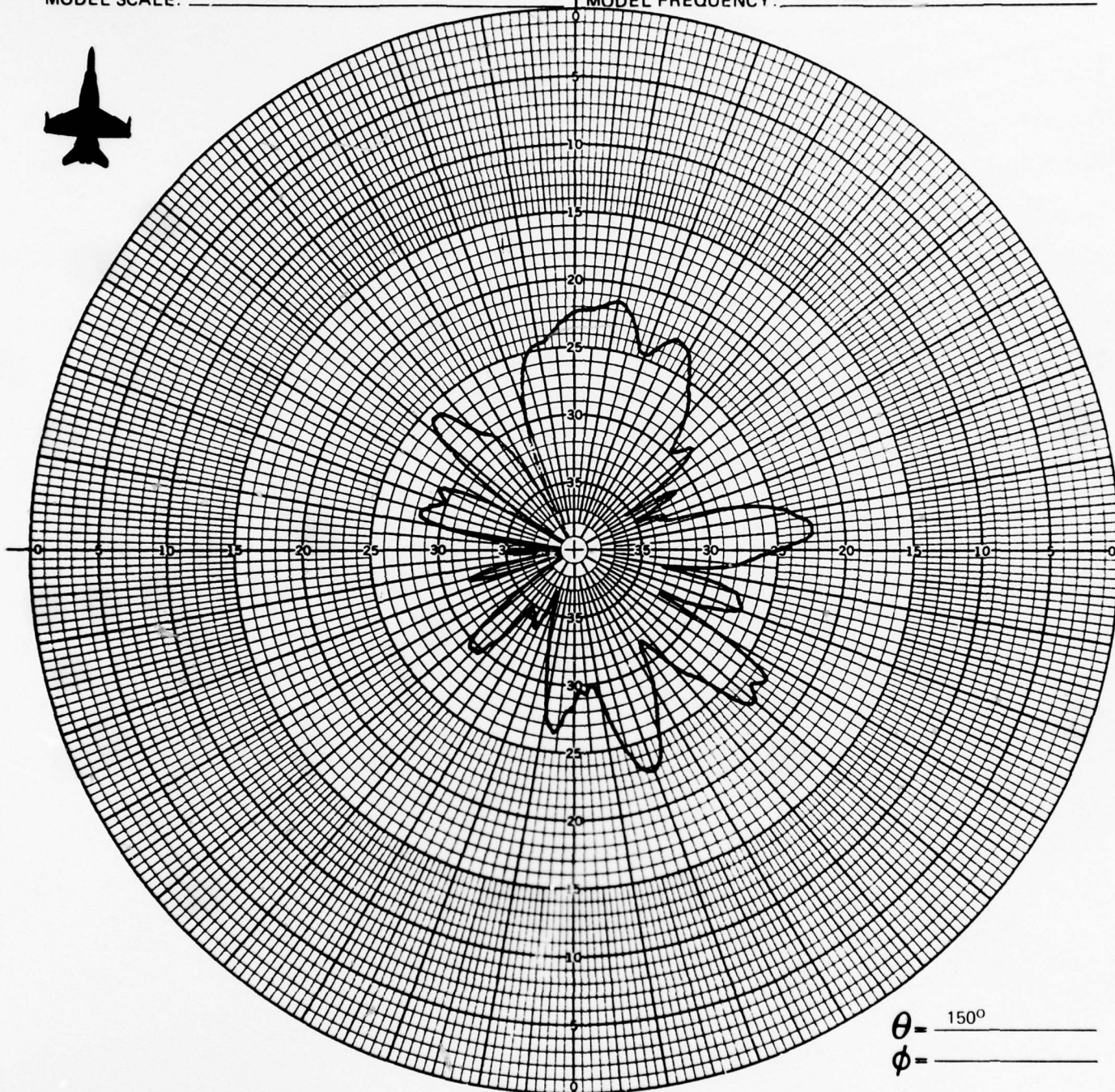
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: 4-28-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 325 MHz
MODEL FREQUENCY: _____ 1300 MHz



θ = 150°
 ϕ = _____

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

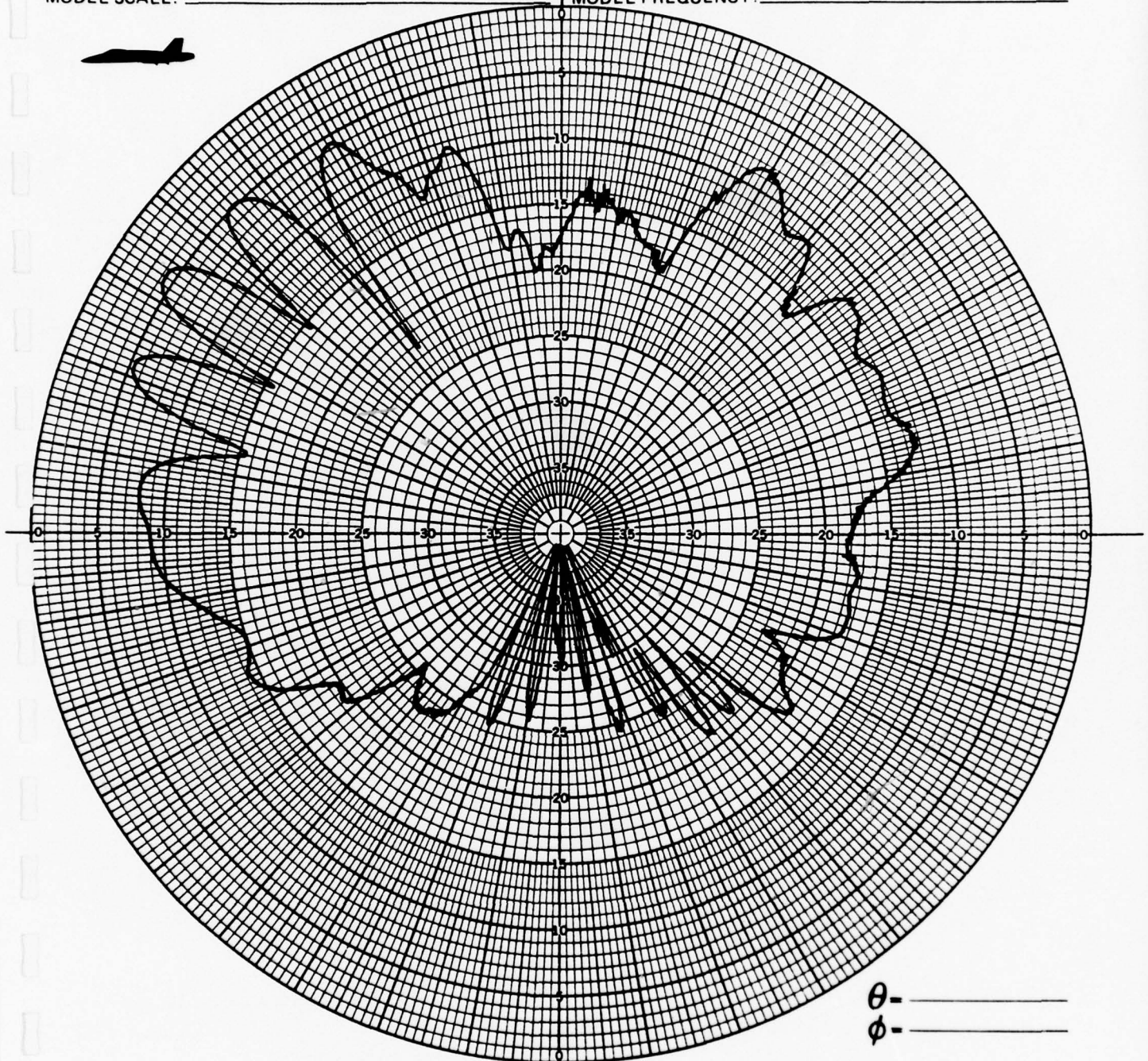
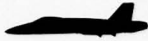
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: 4-28-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/4

TEST IDENT.: 703-174 (F-18)
FULL SCALE FREQUENCY: 400 MHz
MODEL FREQUENCY: 1600 MHz



θ - _____
 ϕ - _____

CONFIGURATION: 30

INTEGRATOR COUNT: 00

REMARKS: _____

POLARIZATION: ☒ $E\phi$ ☐ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

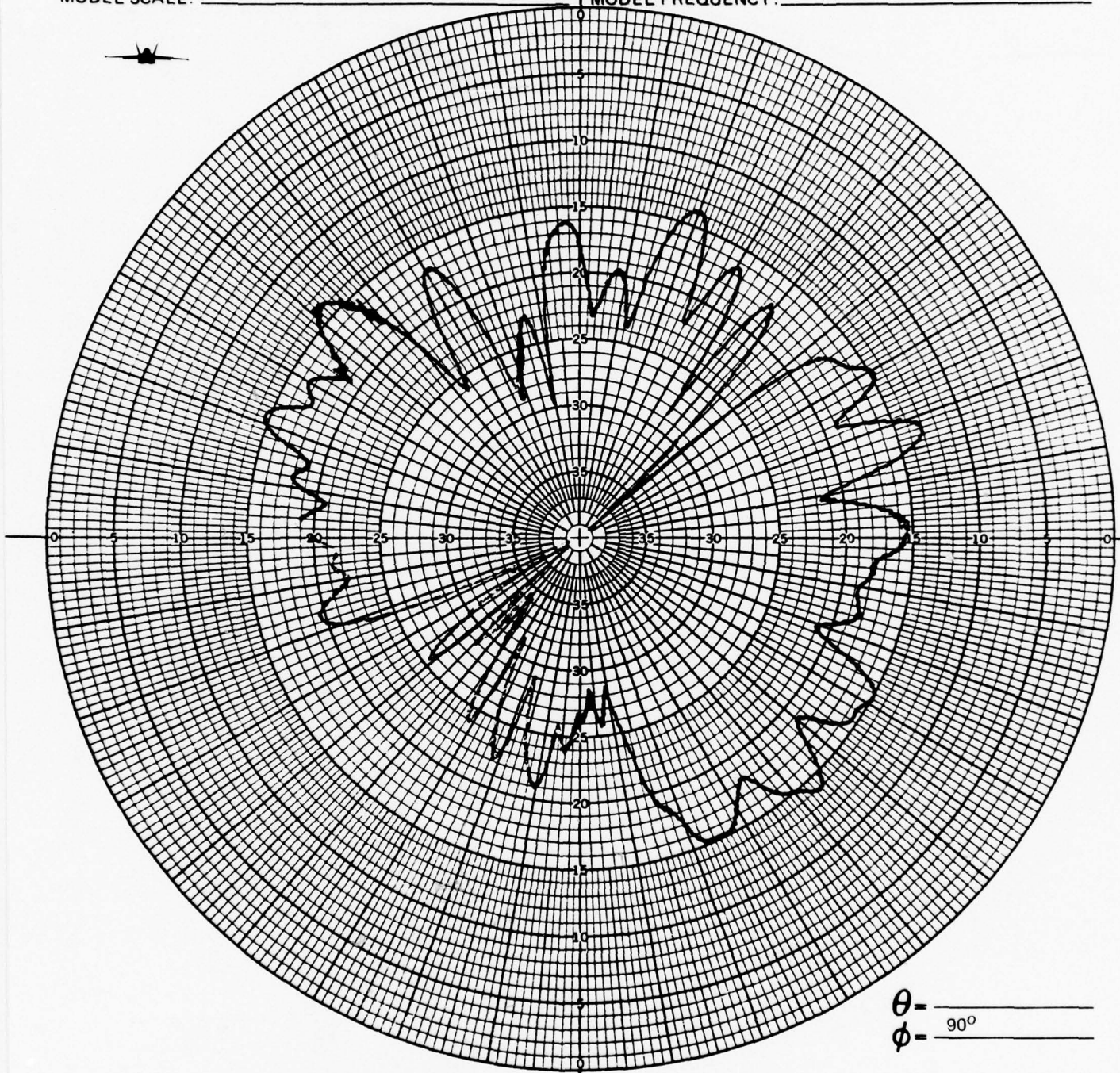
TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 4-28-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 400 MHz
MODEL FREQUENCY: _____ 1600 MHz



θ - _____
 ϕ - 90°

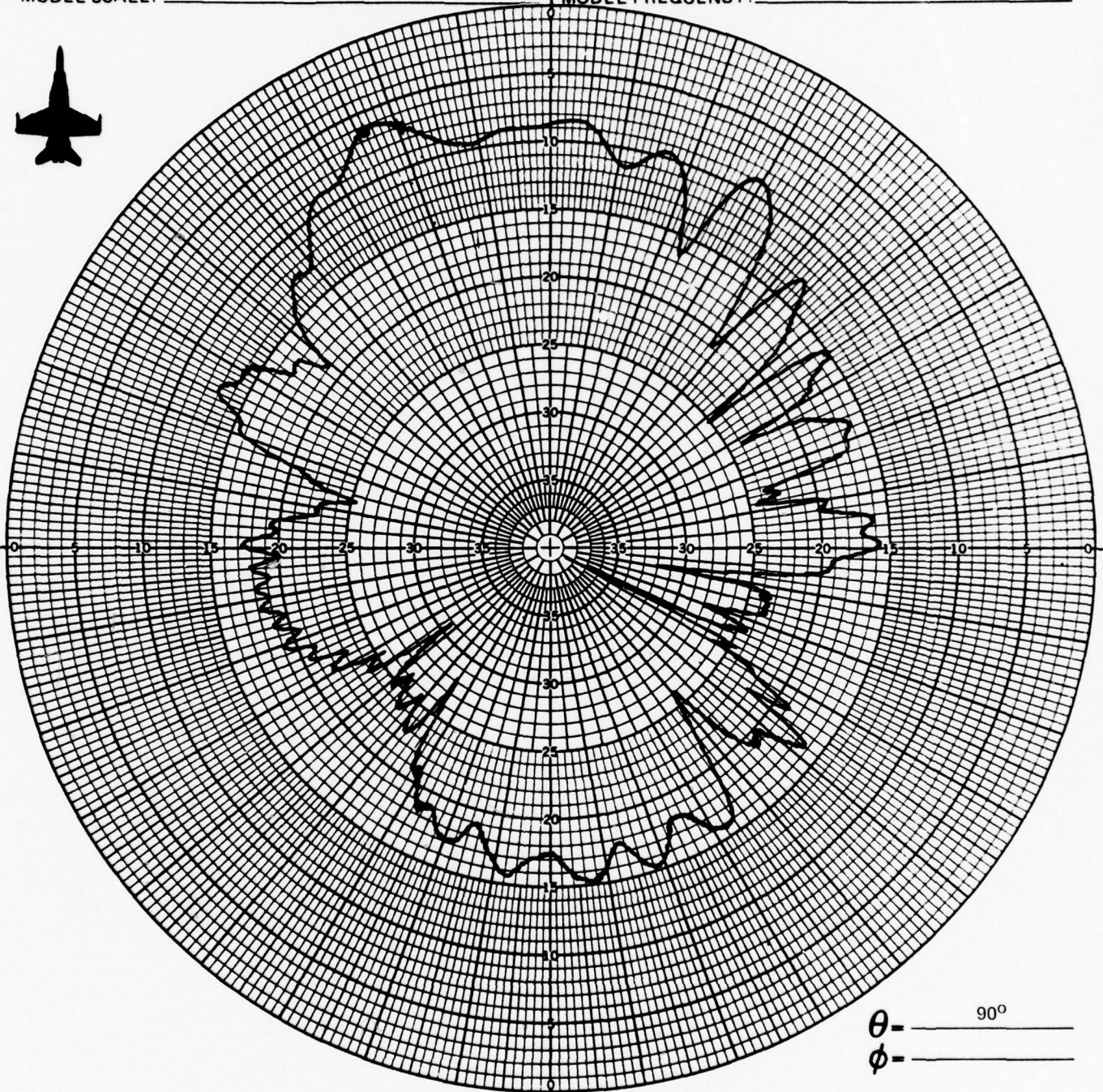
CONFIGURATION: _____ 30
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: E ϕ ☐ E θ ☒ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: 4-28-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 400 MHz
MODEL FREQUENCY: _____ 1600 MHz



θ - _____ 90°
 ϕ - _____

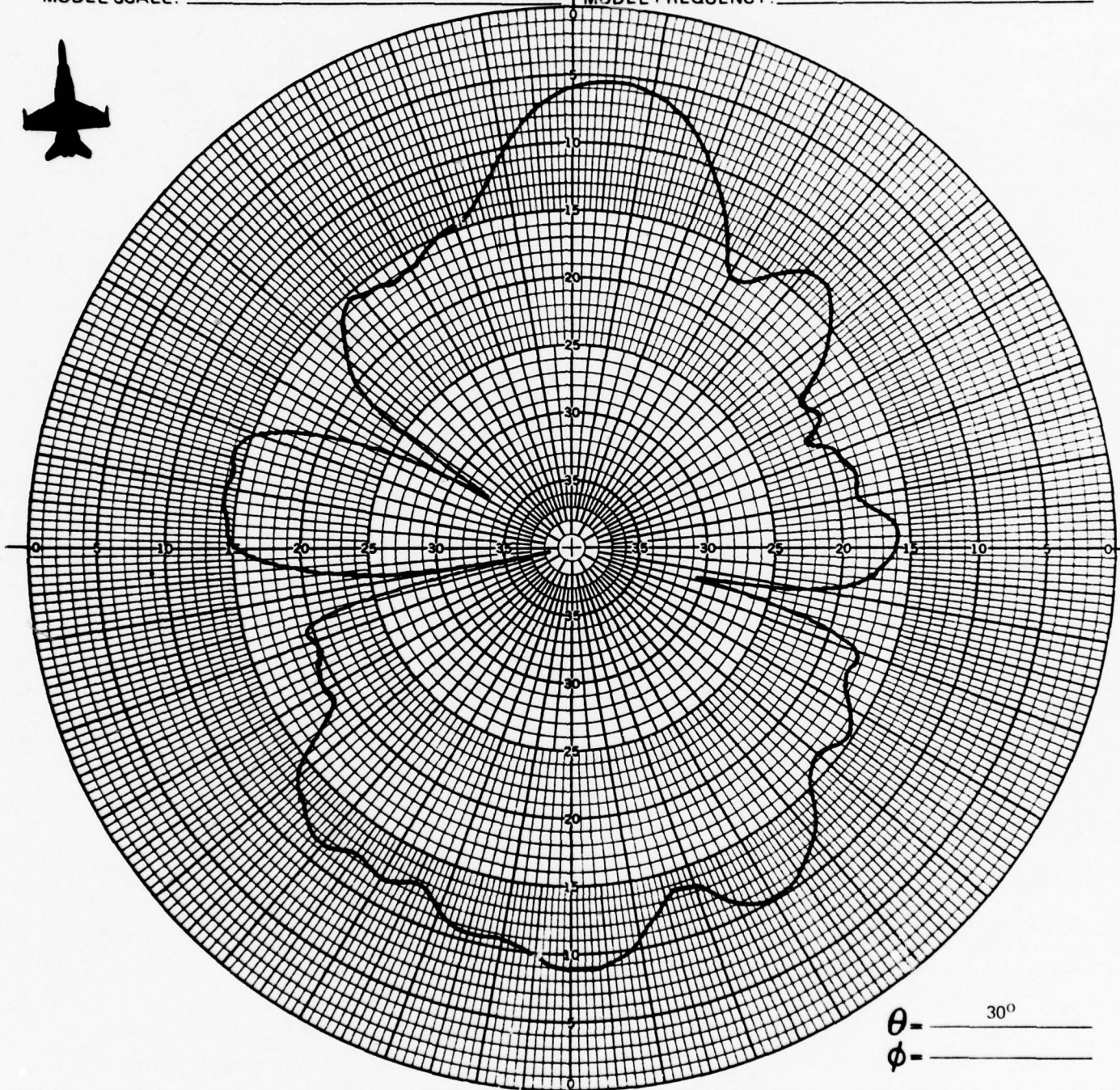
CONFIGURATION: _____ 30
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: _____ 4-28-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 400 MHz
MODEL FREQUENCY: _____ 1600 MHz



θ - _____ 30°
 ϕ - _____

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

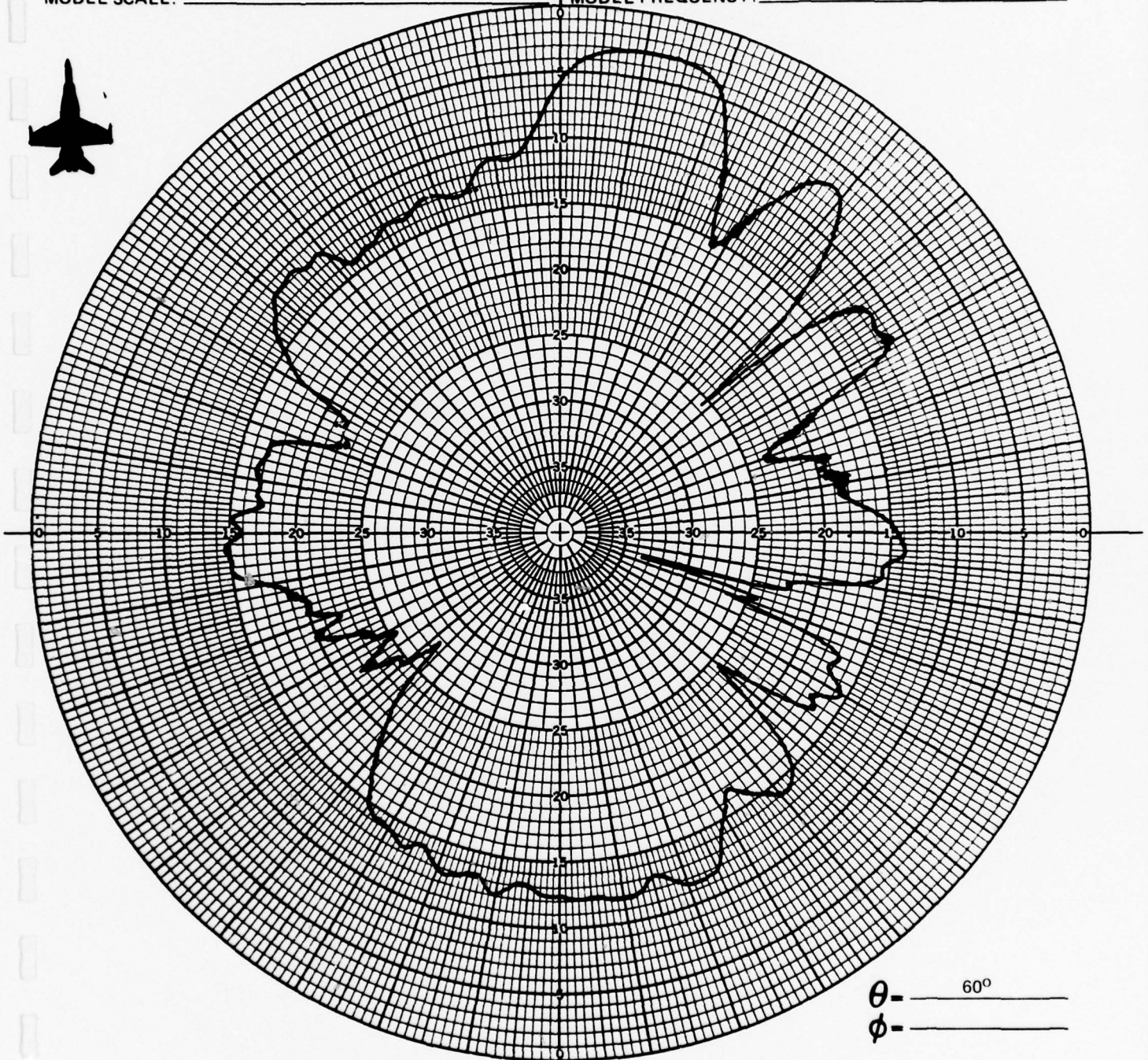
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 4-28-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 400 MHz
MODEL FREQUENCY: _____ 1600 MHz



θ - _____ 60°
 ϕ - _____

CONFIGURATION: _____ 30
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: E ϕ ☐ E θ ☒ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: _____ 4-28-77

ANTENNA: FLYING PROTOTYPE

ANTENNA LOCATION: FINCAP

MODEL SCALE: 1/4

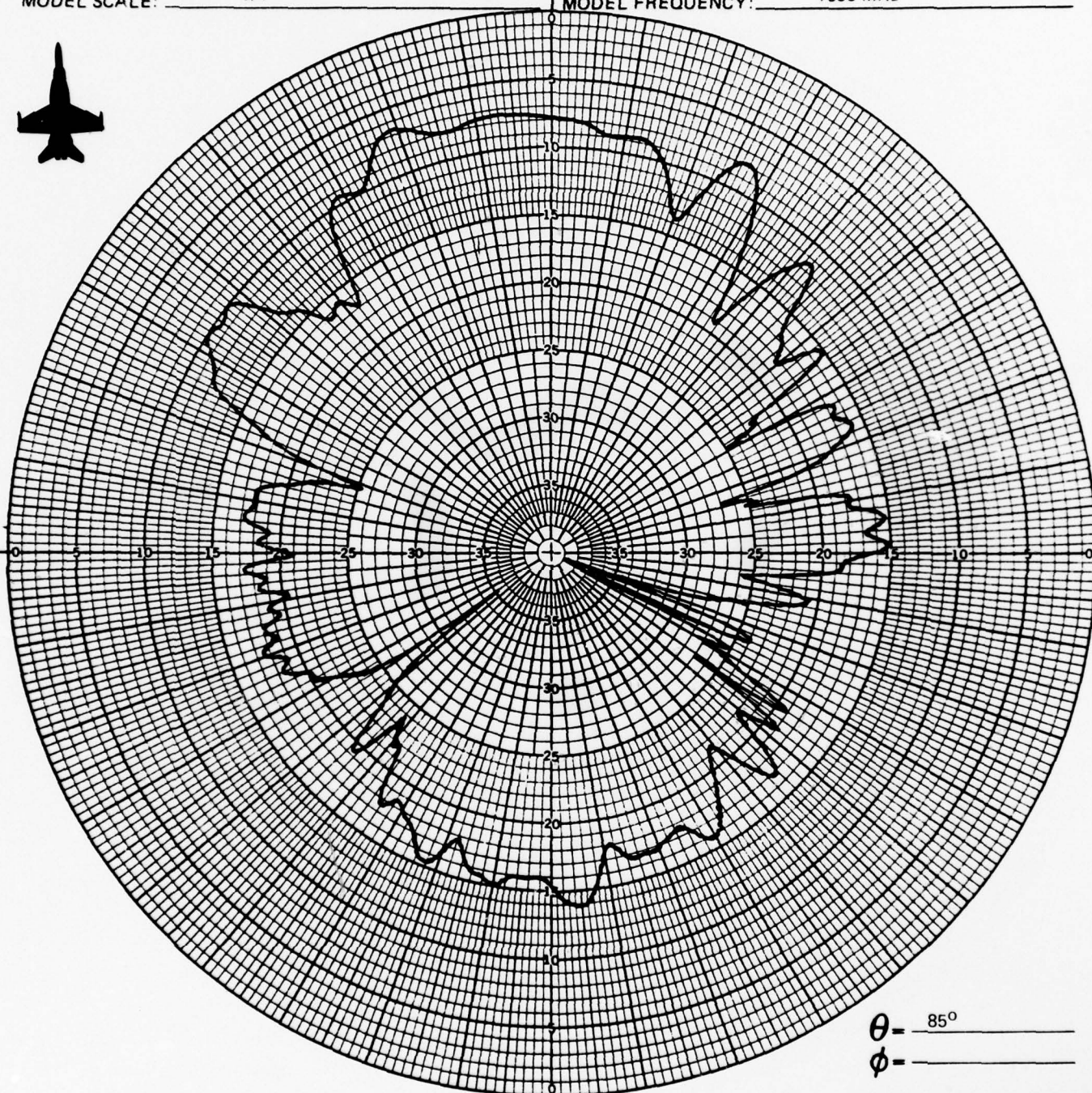
DOCUMENT _____

REVISION _____

TEST IDENT.: 703-174 (F-18)

FULL SCALE FREQUENCY: 400 MHz

MODEL FREQUENCY: 1600 MHz



θ - 85°

ϕ - _____

CONFIGURATION: 30

REMARKS _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: 285 FT

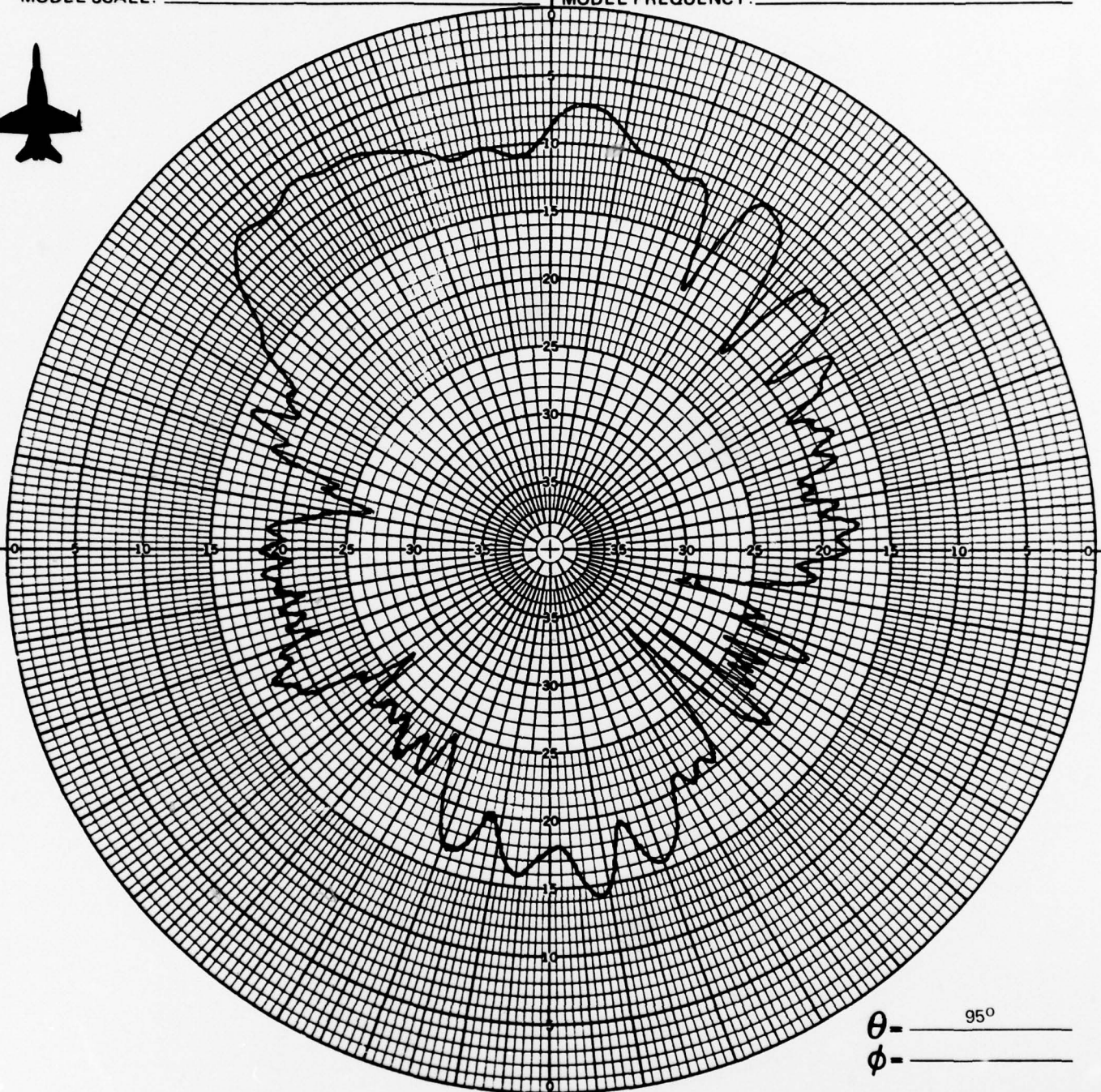
OBSERVER: PN, BM

DATE: 4-28-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 400 MHz
MODEL FREQUENCY: _____ 1600 MHz



θ - _____ 95°
 ϕ - _____

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

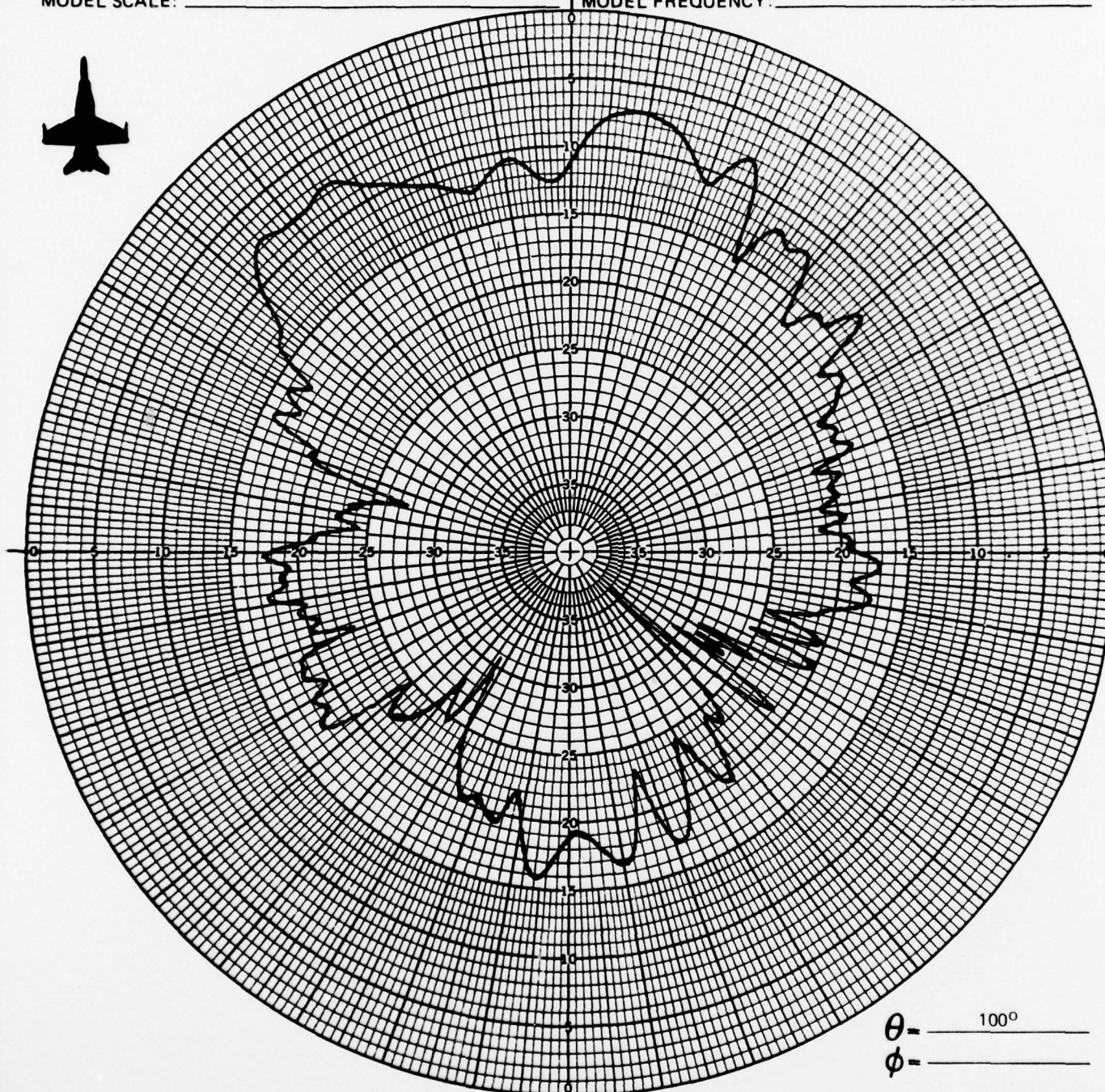
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 4-28-77

DOCUMENT _____
REVISION _____

ANTENNA: FLYING PROTOTYPE
ANTENNA LOCATION: FINCAP
MODEL SCALE: 1/4

TEST IDENT.: 703-174 (F-18)
FULL SCALE FREQUENCY: 400 MHz
MODEL FREQUENCY: 1600 MHz



θ = 100°
 ϕ = _____

CONFIGURATION: 30

INTEGRATOR COUNT: _____

REMARKS: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 4-28-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE

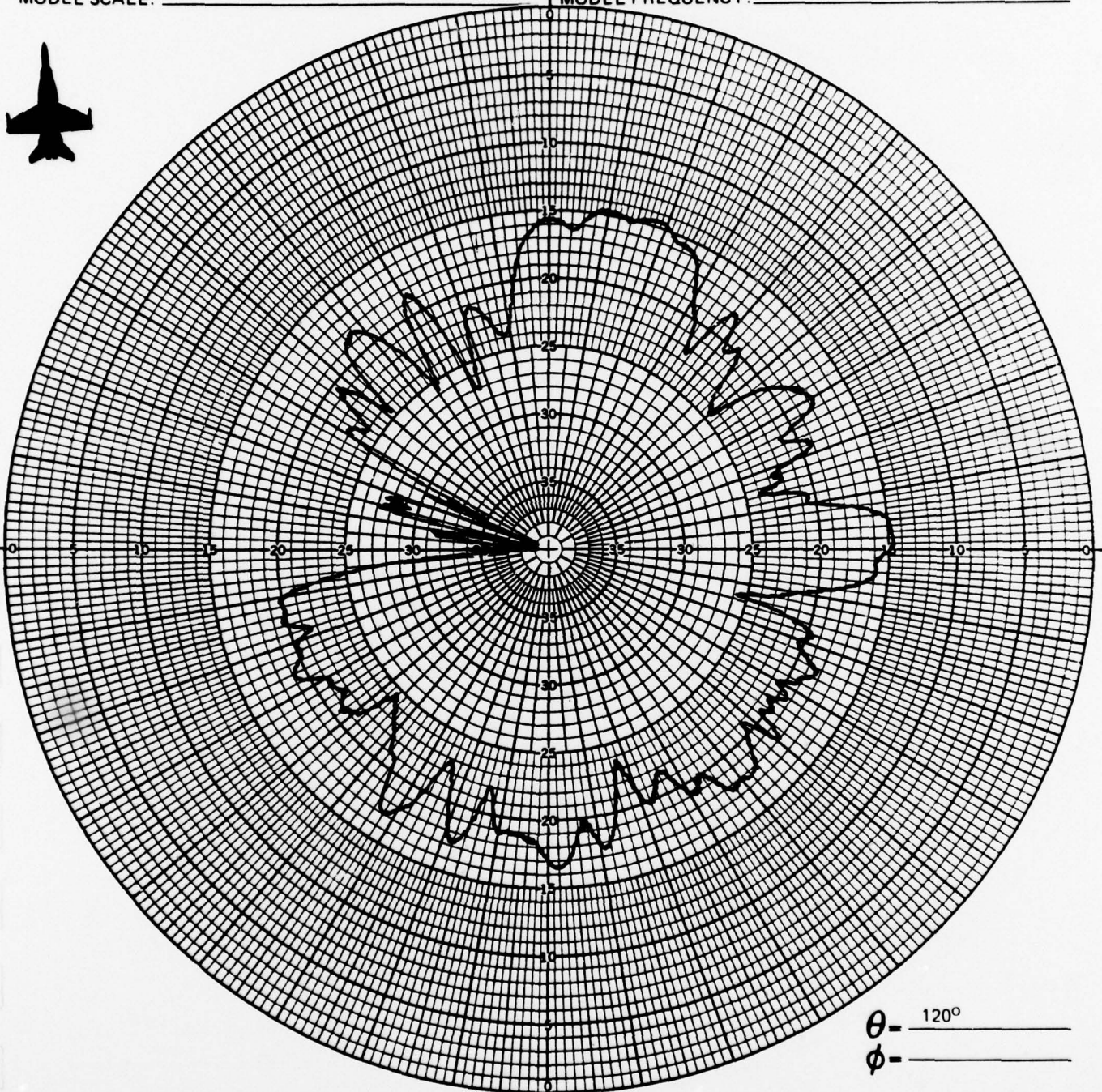
ANTENNA LOCATION: _____ FINCAP

MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)

FULL SCALE FREQUENCY: _____ 400 MHz

MODEL FREQUENCY: _____ 1600 MHz



θ - 120°
 ϕ - _____

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☐ $E\theta$ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

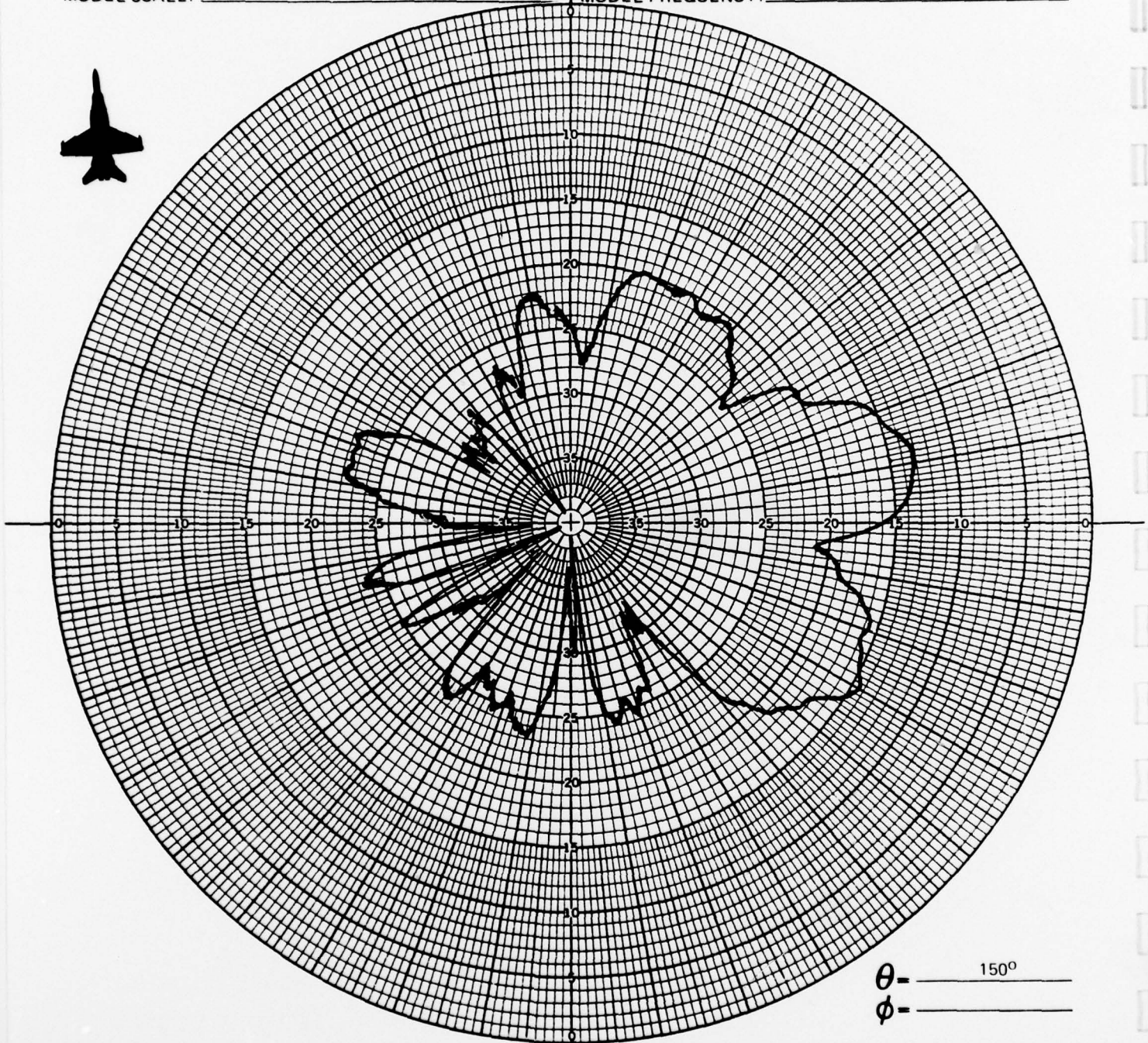
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: 4-28-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 400 MHz
MODEL FREQUENCY: _____ 1600 MHz



θ - _____ 150°
 ϕ - _____

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: E ϕ ☐ E θ ☒ OTHER: _____

PLOTTED IN: RELATIVE dB

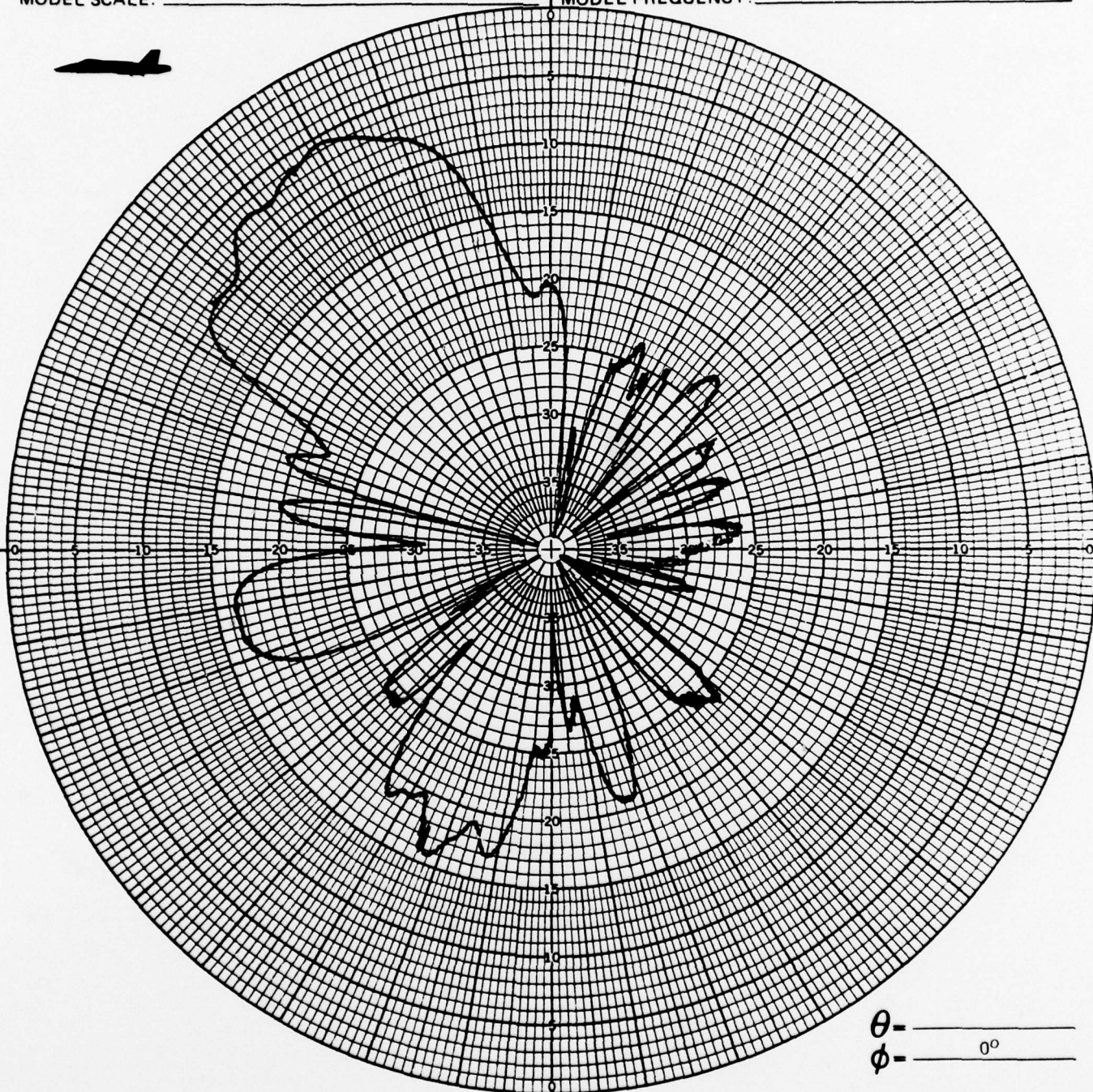
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 4-28-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 400 MHz
MODEL FREQUENCY: _____ 1600 MHz



θ - _____
 ϕ - _____ 0°

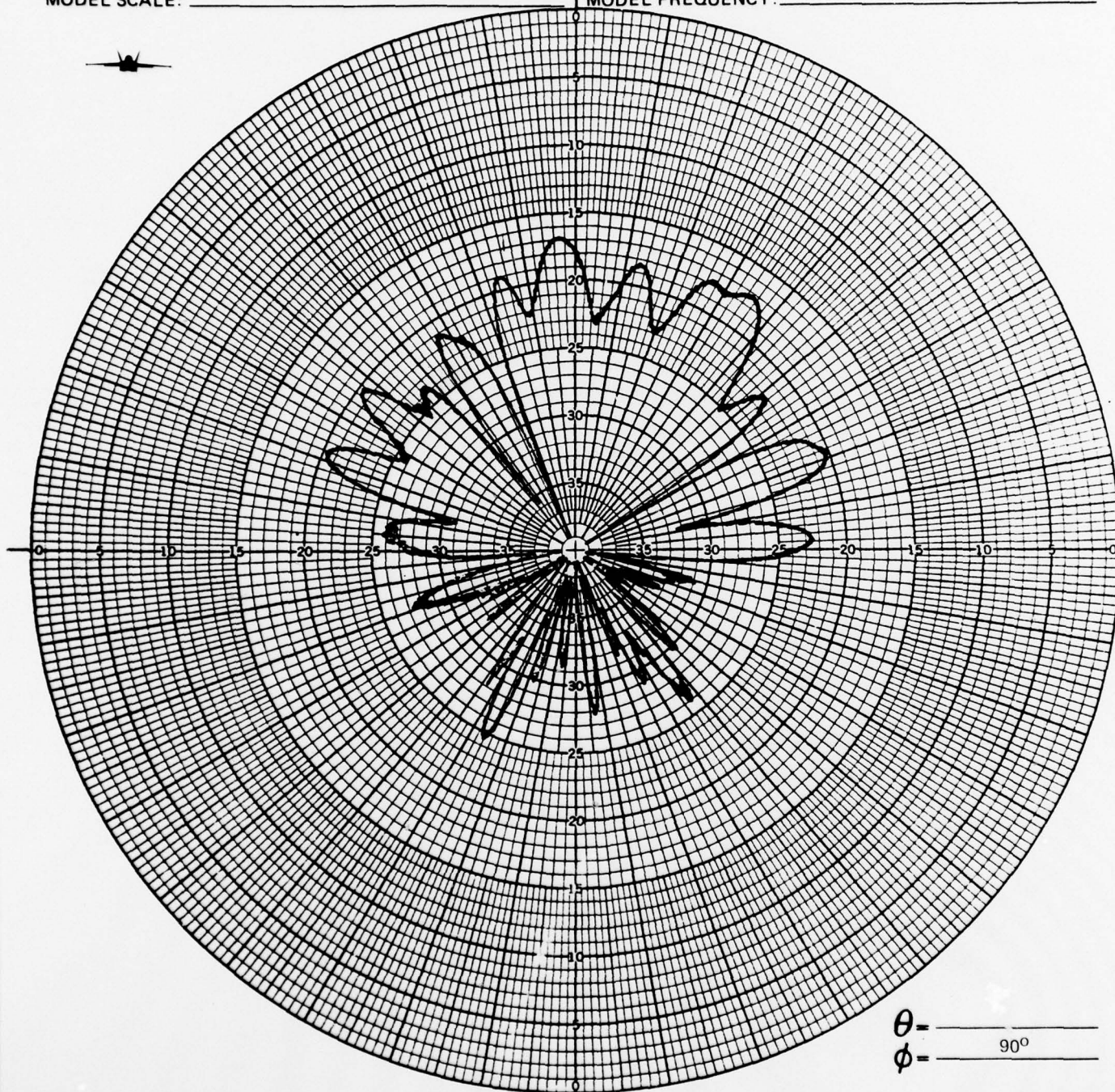
CONFIGURATION: _____ 30
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: E ☒ ϕ ☒ E θ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: _____ 4-28-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 400 MHz
MODEL FREQUENCY: _____ 1600 MHz



CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM _____ DATE: _____ 4-28-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE

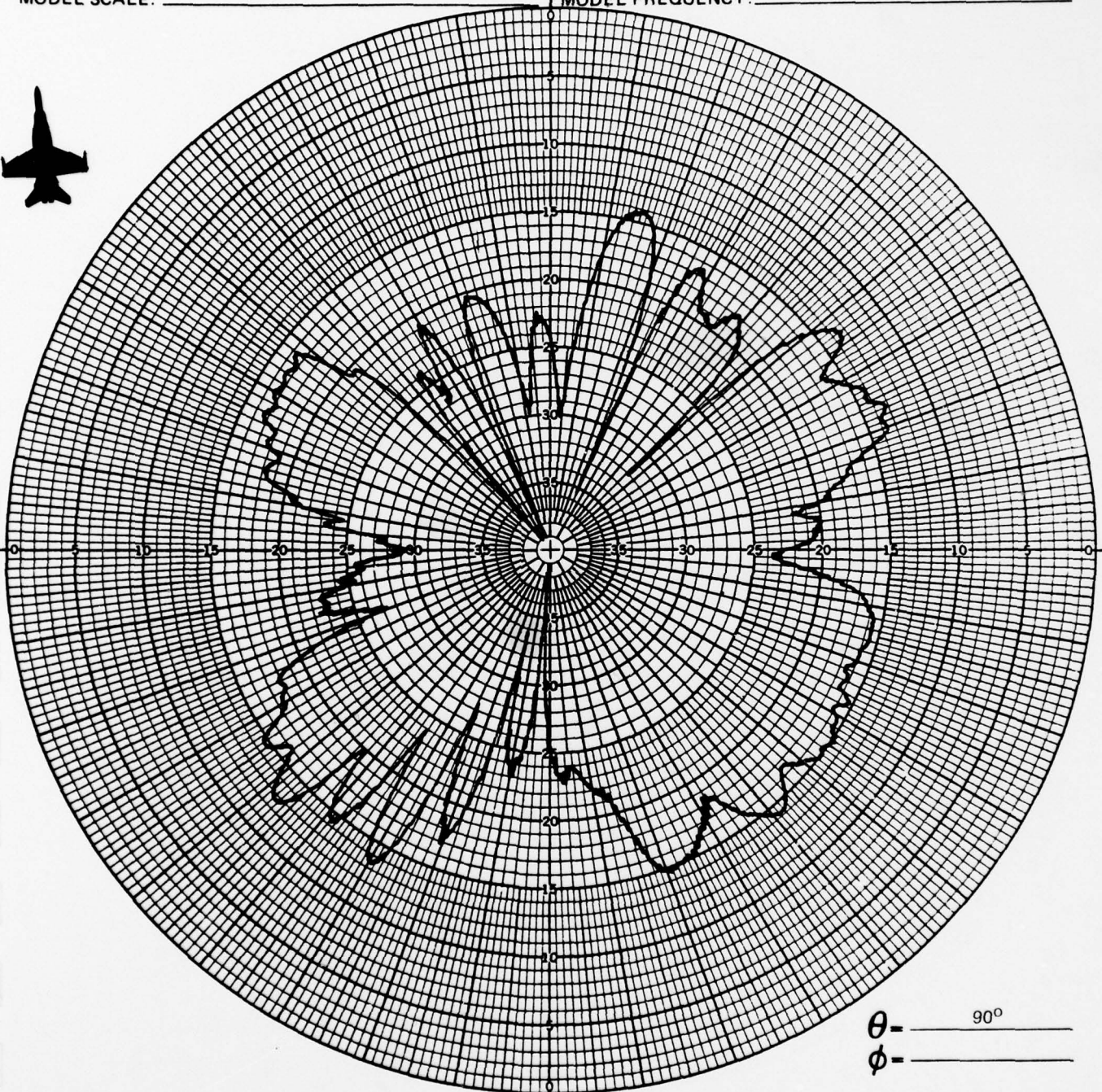
ANTENNA LOCATION: _____ FINCAP

MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)

FULL SCALE FREQUENCY: _____ 400 MHz

MODEL FREQUENCY: _____ 1600 MHz



θ - _____ 90°
 ϕ - _____

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

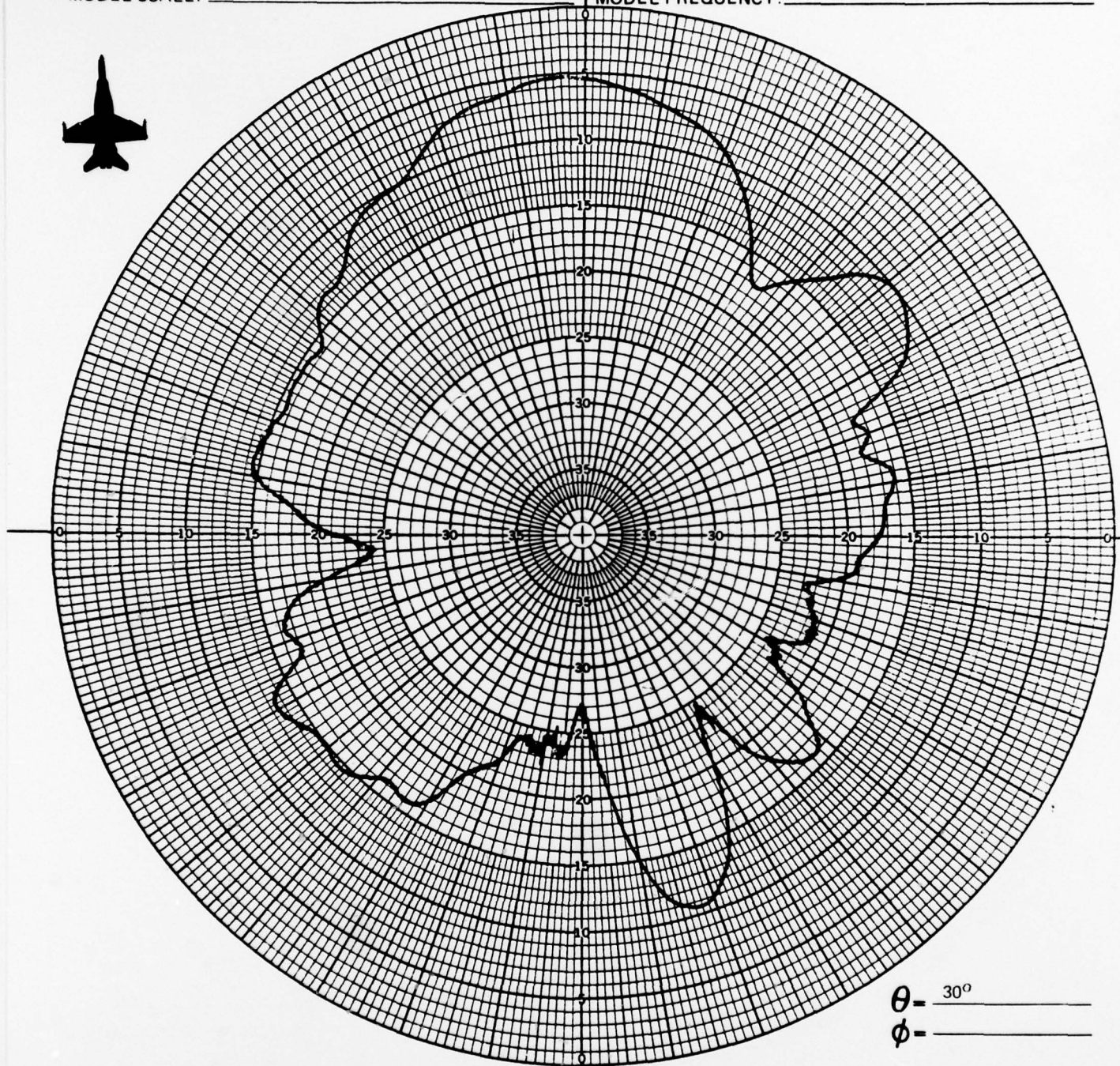
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM _____ DATE: _____ 4-28-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 400 MHz
MODEL FREQUENCY: _____ 1600 MHz



θ - 30°
 ϕ - _____

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: 4-28-77

ANTENNA: FLYING PROTOTYPE

ANTENNA LOCATION: FINCAP

MODEL SCALE: 1/4

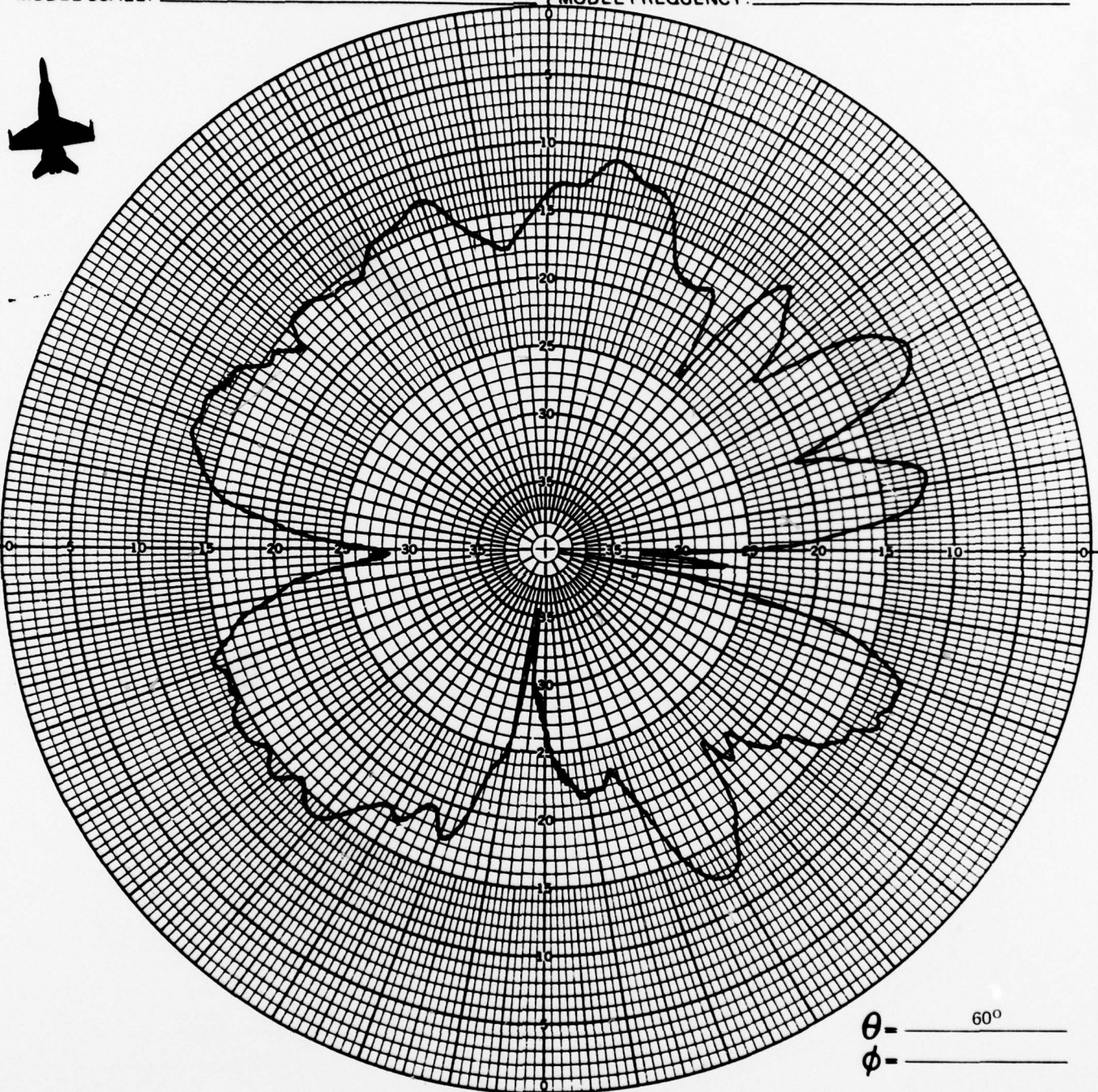
DOCUMENT _____

REVISION _____

TEST IDENT.: 703-174 (F-18)

FULL SCALE FREQUENCY: 400 MHz

MODEL FREQUENCY: 1600 MHz



CONFIGURATION: 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: ☒ E ϕ ☐ E θ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: 285 FT

OBSERVER: PN, BM DATE: 4-28-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE

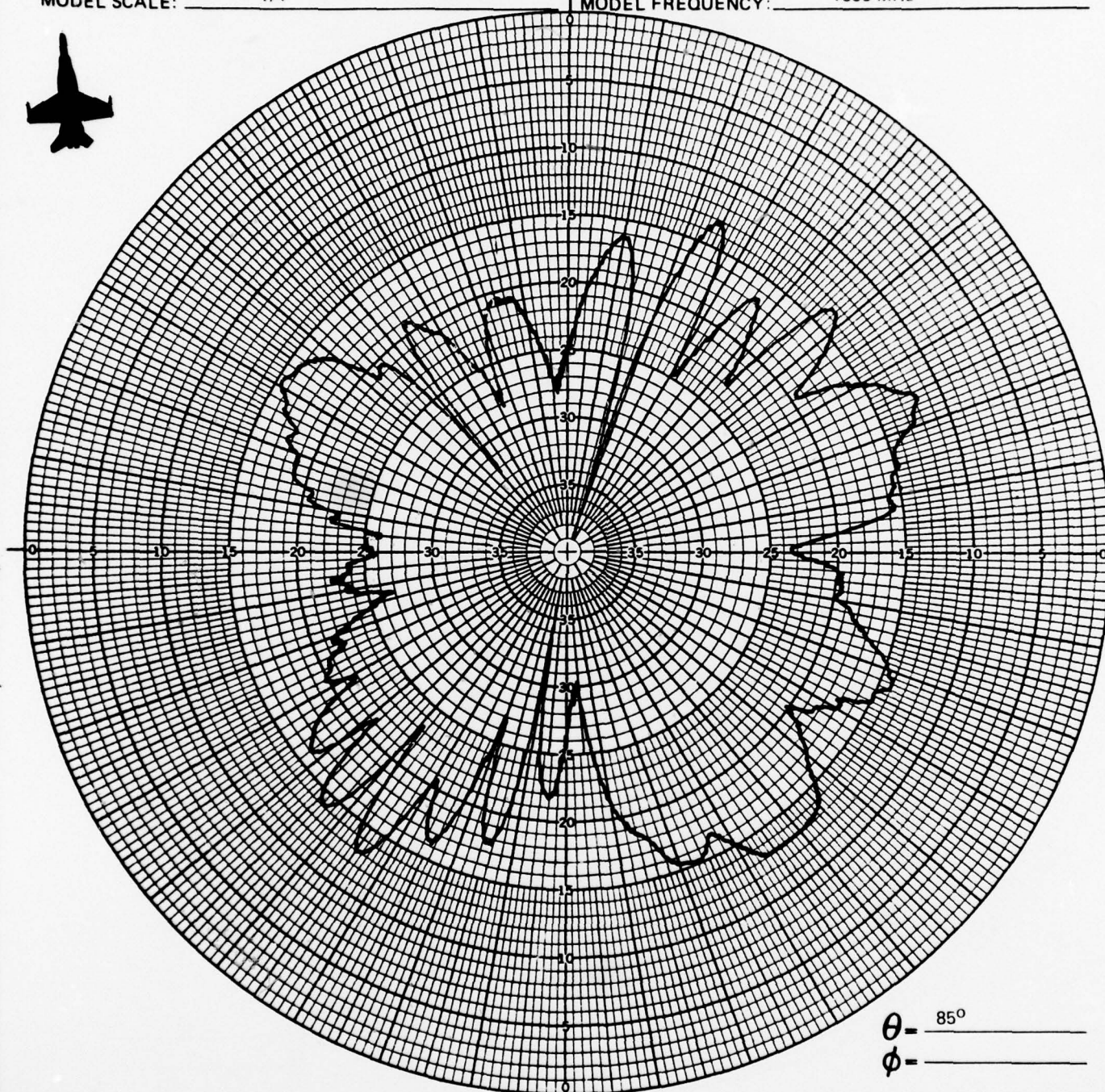
ANTENNA LOCATION: _____ FINCAP

MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)

FULL SCALE FREQUENCY: _____ 400 MHz

MODEL FREQUENCY: _____ 1600 MHz



θ - 85° _____
 ϕ - _____

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

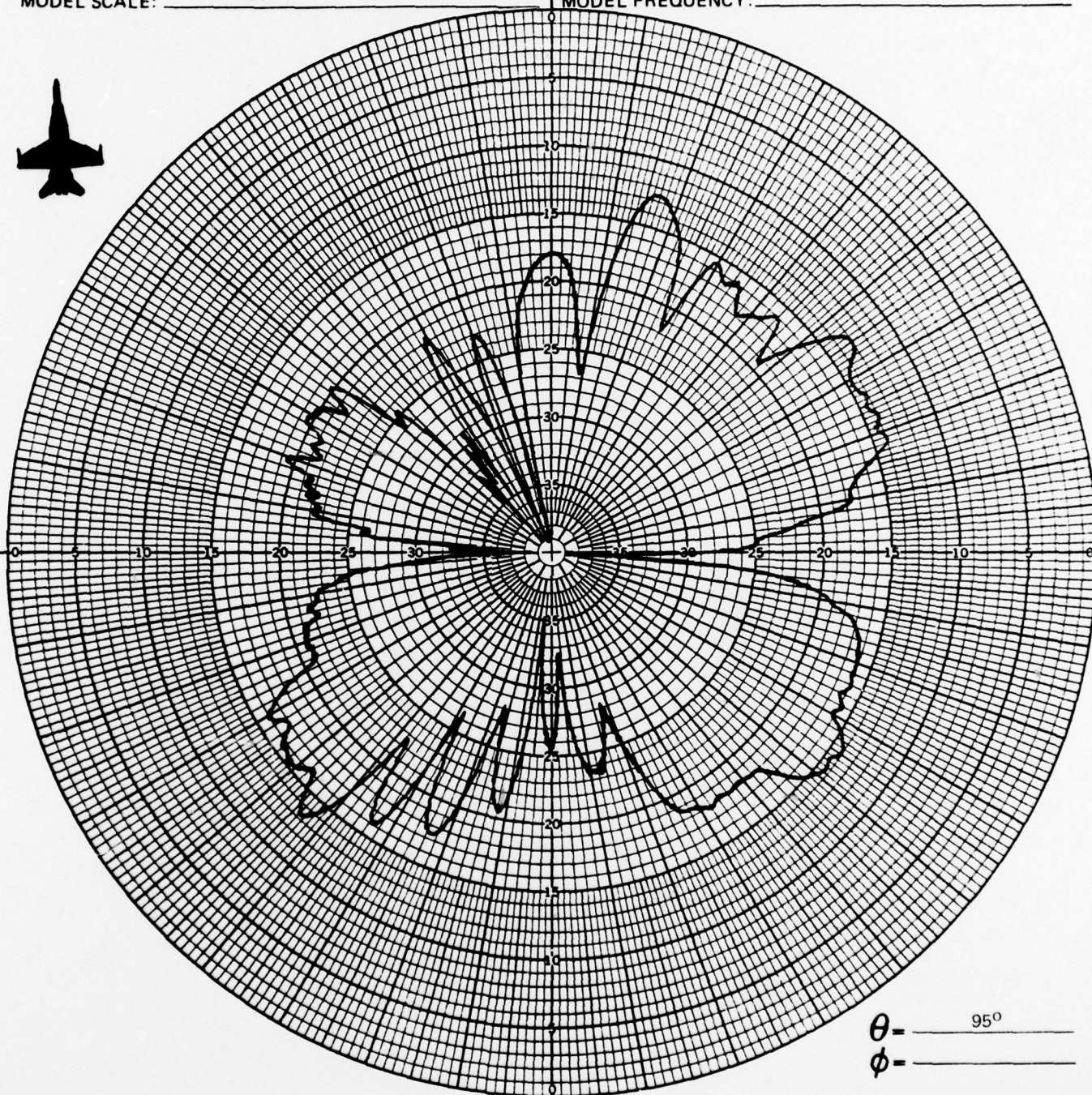
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: 4-28-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 400 MHz
MODEL FREQUENCY: _____ 1600 MHz



θ - _____ 95°
 ϕ - _____

CONFIGURATION: _____ 30
REMARKS: _____

INTEGRATOR COUNT: _____
POLARIZATION: E ☒ ϕ ☐ E θ ☐ OTHER: _____
PLOTTED IN: RELATIVE dB
TRANSMISSION DISTANCE: _____ 285 FT
OBSERVER: _____ PN, BM DATE: _____ 4-28-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE

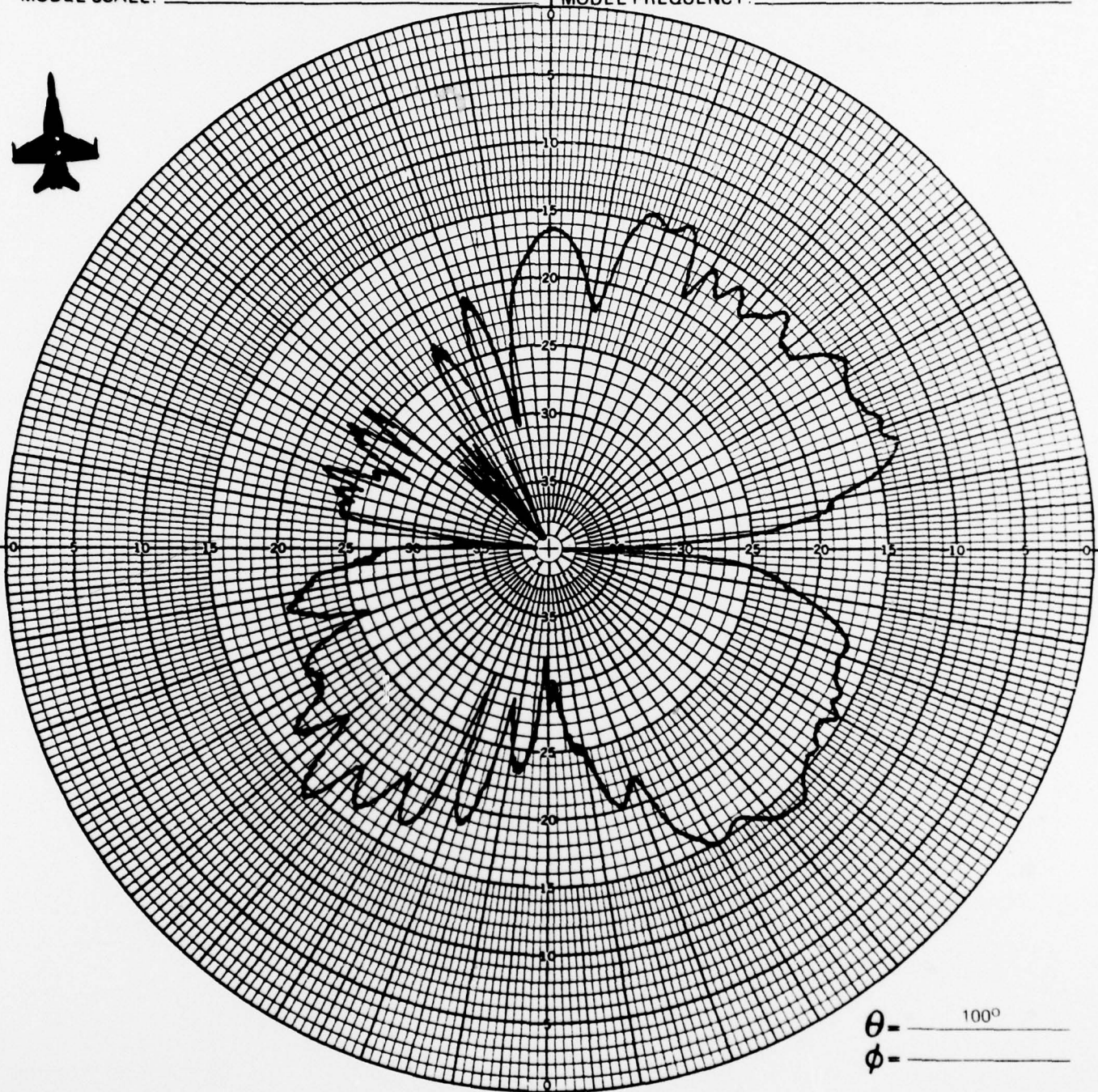
ANTENNA LOCATION: _____ FINCAP

MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)

FULL SCALE FREQUENCY: _____ 400 MHz

MODEL FREQUENCY: _____ 1600 MHz



θ - _____ 100°
 ϕ - _____

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

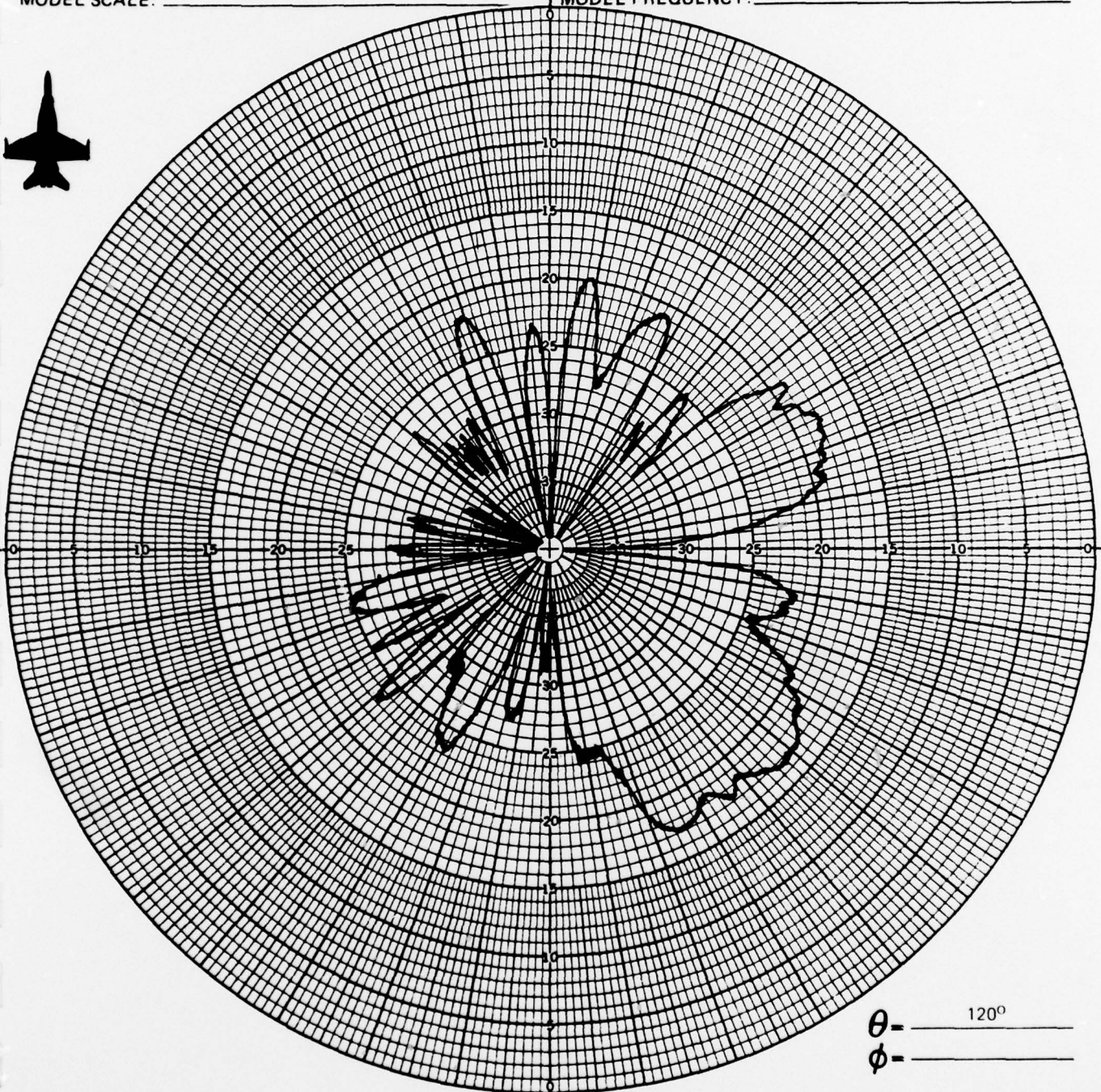
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM _____ DATE: _____ 4-28-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 400 MHz
MODEL FREQUENCY: _____ 1600 MHz



θ - _____ 120°
 ϕ - _____

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: ☒ $E\phi$ ☐ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

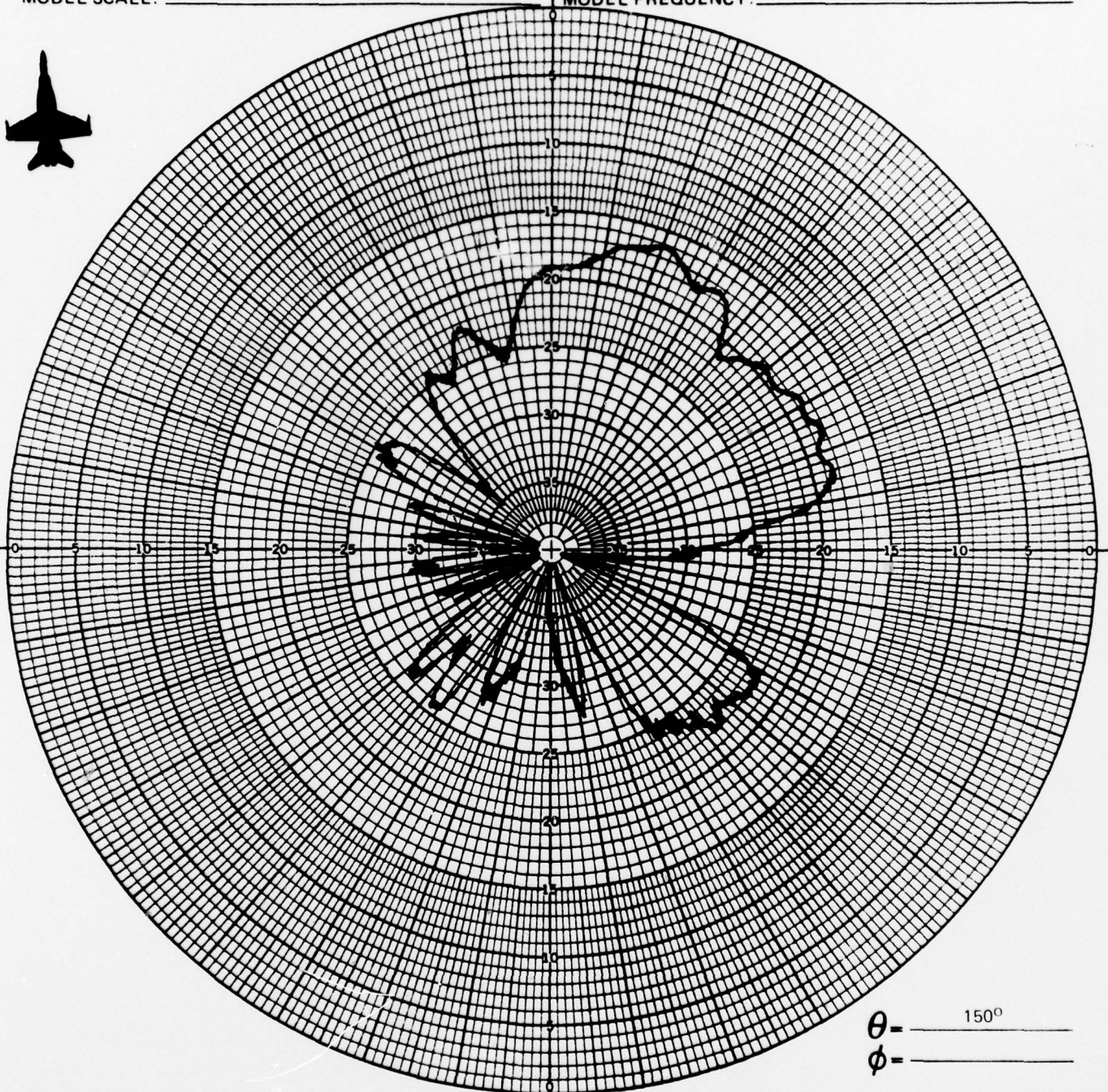
TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 4-28-77

DOCUMENT _____
REVISION _____

ANTENNA: _____ FLYING PROTOTYPE
ANTENNA LOCATION: _____ FINCAP
MODEL SCALE: _____ 1/4

TEST IDENT.: _____ 703-174 (F-18)
FULL SCALE FREQUENCY: _____ 400 MHz
MODEL FREQUENCY: _____ 1600 MHz



θ = _____ 150°
 ϕ = _____

CONFIGURATION: _____ 30

REMARKS: _____

INTEGRATOR COUNT: _____

POLARIZATION: $E\phi$ ☒ $E\theta$ ☐ OTHER: _____

PLOTTED IN: RELATIVE dB

TRANSMISSION DISTANCE: _____ 285 FT

OBSERVER: _____ PN, BM DATE: _____ 4-28-77